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NOTES ON FOUNDER—"FOURBURE"—LAMINITIS.

BY A. E. MACGILLIVRAY, M.R.C.V.S., BANFF, N.B.

1. *Novel Treatment for Founder.*—In the *Recueil de Médicine Vétérinaire* for 30th August, 1882, a French veterinarian, M. Cagny, gives the details of a case of acute Founder in a mare, which occurred in his practice in the preceding October, where the treatment adopted was in part entirely new to our profession.

On his arrival, M. Cagny found his patient very badly foundered. He had great difficulty in getting her removed from the stable. He abstracted six or seven litres of blood—about four quarts, removed the shoes, applied astringent cataplasms; and also mustard across the loins as a *derivatif.* Knowing that the case had resulted from over-feeding with corn (*blé*), M. Cagny almost lost hopes of his patient; but the same evening, remembering the analysis given by M. Decroix in the *Recueil* of my article on "Injectio Morphiæ Hypodermica," he administered subcutaneously, by injection at left flank, thirty centigrammes of chlor-hydrate of morphine, and immediately after another injection of fifty centigrammes of croton oil (hypodermically) behind the right shoulder. The croton oil was diluted.

Next day, to his great astonishment, M. Cagny found that his patient could walk about almost normally, and within twenty-four hours the bowels moved very freely, the hypodermic exhibition of the croton oil having acted wonderfully. The effects

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of this treatment having been so prompt and durable, M. Cagny recommends the same to the profession.

The only untoward circumstance was the formation of an abscess, and the subsequent elimination of part of the subcutaneous cellular tissue, at the point where the croton oil was injected; this made the animal halt or lame with the left shoulder, and it continued so for about three weeks. To avoid this shoulder-halting, M. Cagny advises the hypodermic administration of the croton oil to be made about the breast, or some such position not likely to interfere with locomotion.

2. *A remarkable case of Founder.*—On the evening of the 28th of September last, I was called rather hurriedly to attend a posting-horse, which had just arrived from a twenty-one miles' journey, and was said to be "very ill." I lost no time in proceeding to the spot, and found my patient "very ill" indeed. No need for long consideration as to diagnosis; the symptoms showed at once that I had an uncommonly severe case of Acute Founder before me. On examination I found the pulse was 120, the respirations 100, and the thermometer 106° F. The poor brute could not move, the fore legs were well out before, and the hind legs thrown back behind; in fact, he was, as one might say, propping himself up with his four legs!

On examining his feet, I discovered what I had never either seen or heard of before, namely, *blood freely oozing out* at the coronet of all four feet; if anything the hind feet were the worst; and, showing that this bloody discharge at coronets had commenced during progression and before he was stabled, the inside of the thighs were all shotted over with blood, which had been thrown up by his feet while he was trotting or walking. He was completely soaked all over with perspiration.

My prognosis could not well be otherwise than unsatisfactory. I resolved, however, to do all I could to relieve the poor suffering brute. As a matter of course, jugular phlebotomy was utterly impracticable; so, to relieve the pressure in the feet, I had him (after, with extreme difficulty, removing the shoes) bled, or rather opened, at all four toes, and hot poultices applied. On opening the off side toe, in both hind and fore feet, I found an escape of very dark-coloured blood, with a great many bubbles of gas;

thus showing that the destructive process was fairly established in the two bony extremities mentioned. The near fore and near hind feet showed no signs of gas-bubbles on being opened at the toe.

I gave a laxative in combination with a diffusible stimulant, and ordered doses of aconite and potassium iodide; I also applied strong sinapisms to each side, immediately behind the shoulders. After three hours I found my patient rather easier; respiration about 90; and temperature 104°; willing to take a little water, and even attempted to take some hay. Ordered continued applications of hot water to the poultices at feet, and clothed him up for a night. Next morning there was little improvement; respirations over 80; and temperature 103·5°. Continue same treatment. Second morning, horse apparently easier; temperature 102·5°, but very difficult respiration; laxative had operated during the night; ordered diffusible stimulants. About two hours and a half after my last visit, the horse turned round in his stall and dropped down dead!

Post-mortem appearances as follows: Lungs—parenchymatous congestion, rupture of air-cells and capillaries, plugging of vessels and tubes. Heart—right side completely plugged up with large yellow, firm clot weighing nearly a pound and a half. Feet—complete separation between the walls and os pedis, and between sole and os pedis. I could with ease put a shilling-piece in between either of these, all the way up to the coronet; in fact, on sawing up the feet from toe to heel, the os pedis almost fell out of itself, so thorough was the separation.

History of the Horse.—He belonged to an extensive horse-hiring establishment; was purchased a short time before for £60—a long price for a post horse; had recently suffered and been off work from some "severe cold"; was taken out and did forty-seven miles of a journey the day *before* I saw him; on forenoon of the day on which he was attacked he did two or three short turns, and then twenty-one miles of a journey in the afternoon, during which he became so ill as scarcely to be able to conclude the twenty-one miles; this was the last turn he was to do. He was a grand stepper, and no doubt was pushed a little during this final journey, as the driver intended, after a short

rest, to finish off with the twenty-six miles between this and home. With the short turns on the second forenoon, this would have been over 100 miles in less than two days, with a horse just out of a *severe cold.*

Conclusions.—The poor horse was evidently "driven to death," so to speak; and the immediate cause of death was, no doubt, the large clot in the right side of the heart, as he just "dropped down dead"; while, on the other hand, the remote cause of his collapse was, no doubt, the unfitness of the system after "a severe cold," to stand a journey which, in health, might not have injured him.

The most noticeable feature in this case was *the oozing of blood from all four coronets.* I consider this a rather extraordinary occurrence, well worthy of being chronicled and brought before the profession.

Before finishing, I may mention that the exhibition of croton oil hypodermically, in cases of *Fourbure*, has several times been discussed in French veterinary circles since M. Cagny published the notes of his case. Will any one give this "Novel Mode of Treatment of Founder" a trial?

CASES OF ANEURISM IN THE HORSE.

BY A. E. QUERIPEL, M.R.C.V.S., A.V.D., INDIA.

THE following cases of Aneurism having lately been brought to my notice, are communicated, as they may prove of interest to some of the readers of THE VETERINARY JOURNAL.

Aneurism of the Femoral Artery.

The subject was a well-bred "waler" mare, six years old, to which I was called, but which died a few moments prior to my arrival.

I was informed that she suddenly ran back in her stall and fell; the leg immediately commenced to swell, and it was thought that she had dislocated it. No further history of the case could be obtained, as it was stated that previous to this she appeared to be in good health.

On seeing the animal, the most noticeable feature was the

extraordinary tympanitic condition of the abdomen; this must have existed before death, as it had only occurred twenty minutes before I saw her. On further examination a very large dense tumour was found to exist on the inner side of the thigh; this was at once recognized as the result of a diffused aneurism, owing to the thorough anæmic condition of the visible mucous membranes. On dissecting the part, an enormous amount of clotted blood was found between the adducter muscles in the femoral region, and was traced to a rupture of the femoral artery at its origin from the external iliac, and just where the arteria profunda femoris arises. Here this vessel was found to be greatly dilated, and the texture of its walls showed that calcareous degeneration was the cause.

This mare was the property of the Rajah of Raparthalah, and had lately been purchased. About three weeks previous to her death she had been pointed out to me as being a particularly fine mare, and at that time was noticed to move remarkably freely; there was then no sign whatever of muscular debility, as is generally seen in these cases.

My opinion is that the animal was suffering from Tympanitis, but owing to the absence of any one in any way versed in equine ailments, this was not noticed. Being tied up, I think she must have struggled violently, and when the head-rope gave she fell heavily backwards, which caused the rupture of the diseased artery. From this time she never rose, and died in great pain.

Aneurism of Posterior Aorta.

This patient—also a "waler" mare—accompanied a battery of artillery to Egypt last year, returning in November; during the campaign she performed her work most satisfactorily, and would appear to have shown no signs of ailing since her return. I myself saw her daily during April and May, and frequently remarked on her generally healthy appearance. She continued to work steadily, and was never reported as being in any way distressed. On 25th May she was put into single draught, and went well for about twenty minutes, when she suddenly plunged forward, groaned loudly, and died.

The *post-mortem* examination, made shortly after death, dis-

closed the presence of two enormous clots of blood under the spine. On examining the posterior aorta, it was found that an aneurism had existed close to the cœliac axis, the walls of the artery being much dilated and atrophied. The semilunar valves in the left ventricle were found to have granular deposits over their surface, around which was an exudation of a peculiar pinkish hue; this may account for the hypertrophied condition of the heart which was found to exist. This organ weighed nearly twelve pounds; the walls, especially those of the aortic ventricle, were much thickened, but were paler in colour than those of a healthy subject.

The remarkable feature in this case was the ease with which the patient performed her work up to the moment of her death, together with her generally healthy appearance. I am inclined to attribute the proximate cause to over-exertion whilst in Egypt, where, owing to the deep sand, the work was abnormally severe.

CONTINUOUS TETANY IN THE HORSE.

BY RICHARD BURKE, M.R.C.V.S., ARMY VETERINARY DEPARTMENT, INDIA.

I HAVE to record a case of what appears to me to be one of unequivocal Tetany in a pony, ten years old, employed in carrying grass for the horses of G Battery, 1st Brigade, Royal Artillery, Benares.

Symptoms.—The symptoms were constituted by simple spasm of the muscles of the hind extremities, extending next to those of the trunk, supervening on an attack of acute Diarrhœa, brought about by exposure to wet, combined with overwork and hard treatment. No paralysis of any kind was noticeable; the muscles were rigid and tense, the post-"pasterns" flexed, and the phalanx thus brought to the ground with the "toe" thrown backwards. Motor action slightly impaired, as forced attempts to progression often caused the animal to fall bodily on his side and remain helpless, until assisted to a standing posture. Sensory nerves unimpaired, as active response was made to local irritation. The muscles of the neck and face gradually became

implicated, the head was bent inwards, the left commissure of the mouth severely contorted, and drawn upwards from contraction of the levator muscle; the masseters were free from spasm, and mastication was normally performed—the jaws easily separated, and the mouth opened and closed in the ordinary manner during the act of feeding. There was no protrusion of the cartilago nictitans. The depressor coccygis was rigidly contracted, the tail being drawn inwards between the thighs and obstinately retained there, for although the animal was noticed to be covered by myriads of flies during the early morning and often through the greater part of the day, yet it made no effort to employ that organ in warding off the attack of this insect.

Local vaso-motor disturbance was also present, as evidenced by occasional sweats, circumscribed œdema, etc. And there was localised hyperasthesia in connection with the skin of the "flanks," and in front of thigh, etc., which was exquisitely sensitive, and became convulsed on the slightest touch and on ordinary application of the hand.

Highest temperature, 102·1; highest pulse, 68. This shows there was never at any time any very high fever. Lowest temperature, 98·6; lowest pulse, 34. This indicates extreme nerve torpor. It is remarkable to note the fall in temperature in this case, as, with one exception,* I do not remember seeing the temperature in the horse fall so low.

The breathing was noticed slightly difficult once, but no lung complications existed, and the sounds were normal and clear, with no sign of temporary congestion or Pneumonia, and no cough or catarrhal discharge. And as it soon assumed its natural character, no special treatment was therefore adopted.

The patient appeared better and worse for about three weeks, having received diaphoretic medicine, ferrous tonics, and fomentations locally, enjoyed quietude, rest, and ordinary comfort, when he was destroyed by order of the officer commanding.

Post-mortem examination showed nothing special to account for the pathology of the disease. There were noticed points of extravasation in the spinal cord, with effusion between it and its

* "Contagious Fever in the Horse," Woolwich, by R. W. Burke, VETERINARY JOURNAL, 1882.

outer covering; but this was secondary, the result of the acute disorder of function, and did not explain to me how we were to construe the special morbid influence by which that disorder was brought about. I could not detect anything abnormal in connection with the brain and its meninges, which were perfectly healthy, at least so far as could be gleaned macroscopically.

VOMITING IN THE HORSE.

BY J. A. NUNN, M.R.C.V.S., A.V.D., LAHORE.

ON the evening of the 2nd September, at about five p.m., I was asked to look at a pony the property of an officer in the 8th Hussars, who was quartered at Gharial (one of the invalid camps near the hill-station of Murree), which was described to me as having been suffering since the morning from retention of urine. The owner informed me that he had bought the pony (a bay stallion seven years old), about a month ago, from a native horse-dealer, and as it was in very poor condition, he had given it four seers (eight pounds) of gram (the seed of a plant of the vetch family, partaking of the nature of a bean) daily, in addition to as much grass as the pony could eat. On seeing the animal, he was standing quietly with his head rather drooped, ears pendulous and cold, pulse about seventy per minute, very hard under the finger, and the conjunctiva and Schneiderian membrane much injected, the latter of a cadaverous purple or blue hue. On examination per rectum, a quantity of foul-smelling fæces, containing a large number of undigested grains of gram, was removed, and the bladder was felt much distended with urine. I had no instruments of any kind, but telegraphed to Rawal Pindee, the nearest station, forty miles off, for a catheter, which arrived by post the next morning. In the meantime, the medical officer in charge of the camp having placed such medicines as he had at my disposal, I gave ℞ Ol. ricini ʒx., Tinc. opii ʒj., Spt. aeth. nit. ʒj., and applied a mustard cataplasm to the abdomen. I had the pony exercised, and in about twenty minutes a quantity of urine was passed. I left directions that the abdomen was to be fomented all night, and the following drink given every four hours—Spt. aeth. nit. ʒj., Tinc. opii

℥j., Ol. ricini ℥v. I saw the patient the following morning at eight a.m., Sept. 3rd. The pulse had gone up to eighty-four, and the mucous membranes were very much more congested than on the previous evening. I was also informed that he had vomited three times during the night after each dose of medicine. I closely questioned the attendants, a trooper of the 8th Hussars and a shoeing-smith of the Royal Artillery; the latter informed me that during his service he had seen several horses that died of ruptured stomach vomit, and he was most positive that this pony did the same. The first time was about three hours after the first dose, at about ten p.m., and was described to me as being "about half a bucketful and smelling like vinegar;" the other times about half an hour after each of the doses. I ordered the fomentation to be continued, and gave ℞ Tinc. opii. ℥ss., Pulv. ipecac. ℥ss., aqua qs. every four hours. I had to give the Tinc. opii, as I was not able to get any crude opium. I had but little hopes of the animal living over a few hours; so much so that I asked the owner to let me know if it died during the course of the day, so that I might make a *post-mortem* examination. On again seeing him on the evening of the 3rd, at about five p.m. he was much improved: the pulse was seventy-six, and the temperature (I had borrowed a thermometer) 102° F. No urine had been voided since the previous evening, so I passed the catheter, which had arrived in the morning, and drew off about a pint and a half of thick, brown-coloured urine. I ordered the fomentation to be continued, and the following ball to be given every four hours—Pulv. opii ℥ss., Pulv. ipecac. ℥ss., excipient qs. I saw the pony again on the 4th, at eight a.m., when the pulse was sixty-four and temperature 101°F. He had voided urine three times during the night, and passed a great quantity of flatus per anum. I discontinued the fomentation, which had been steadily kept up night and day since the evening of the 2nd, and as he seemed very hungry I gave him a small quantity of bran mash. From this time he improved steadily, and is now convalescent and doing well. During the entire time the attack lasted there was no violent pain shown, only general uneasiness. The case appears to me to be a remarkable one, as in my experience I have never known a horse to recover after vomiting.

CASE OF HEART DISEASE IN A PONY.

BY J. S. BARBER, M.R.C.V.S., RUGBY.

ON May 1st, of this year, I was requested to attend a yearling Welsh mare pony, said to be lame of the near fore limb. Upon examining the animal, I found a diffused swollen condition of the near shoulder, but could not associate it with any actual disease of the joint itself. The swelling was œdematous in character, extending down the limb nearly to the foot. The gait of the animal, however, was plainly indicative of shoulder lameness. As the appetite was good, and the general health of the animal appeared satisfactory, I confined my attention to the local symptoms of the case, and after about a week's treatment, which consisted of hot fomentations to the shoulder, with the application of a stimulating liniment, and the use of diuretic medicines, the swelling disappeared, and the pony was turned to grass, going quite sound. On May 21st, however, I was again asked to see the animal, when the following symptoms were presented:—Stiffness of gait, with swollen condition of near shoulder and both fore limbs; nose protruded, and a very perceptible fulness in the submaxillary space; the superficial veins of the neck and chest were greatly distended, respiration quickened, pulse small and rapid—in fact, almost imperceptible; internal temperature, 104°. Strange to say, the appetite was excellent. The latter fact induced the owner to have the case treated, although I now expressed my decided opinion that the pony was suffering from Heart Disease, which must ultimately prove fatal. Treatment consisted in placing the animal in a large and airy loose box, and the application of a cantharidine blister over the breast, with the administration of diffusible stimulants and febrifuges, and mashes and fresh-cut grass for diet. In two days the temperature was reduced to the normal standard, and the animal appeared much better. Tonics and stimulants were then administered, and a fair allowance of oats and grass given. Under this treatment the pony greatly improved in her general appearance—in fact, began to lay on flesh rapidly. Still, in my opinion, the condition of the heart did not improve. However, after a fortnight's treatment, I discontinued

my attendance, leaving some tonic doses which would last her about a week, at the end of which time she was again turned out to grass, the weather being fine, and I saw no more of her for nearly two months, the owner several times informing me that the pony was doing well. During the first week in August my attendance was again requested, when I found the animal again very lame of the off fore limb, the shoulder was swollen, and there was also a large swelling over the cervical region on the right side. The pony was grazing well, and had scarcely lost any condition; the state of the heart, however, appeared about the same as when I saw her last. As I had really no hopes of the case doing any good, I simply blistered the shoulder and swelling on the neck, and left some iodine blister to be used occasionally. In about a week's time I again saw the animal, and although the lameness had again disappeared and the swelling on the neck was to some extent reduced, I was so convinced that the case was not worth treatment, that I informed the owner that if further improvement was not apparent in a few weeks' time he had better have the animal destroyed. I, therefore, saw no more of her until October 1st, when the owner informed me that the pony was again very lame and rapidly becoming emaciated, and he had decided to take my advice and have her destroyed, which was accordingly done on October 2nd, and I at once made a *post-mortem* examination. On removing the near fore limb from the body, I found a greatly thickened condition of the cellular tissue between the shoulder and chest, and embedded in this tissue were deposits of purulent material, some of which were inspissated, others semi-fluid. On opening the chest I found the lungs healthy, but the heart and its membranes showed great pathological changes; the pericardium was thickened, and the pericardial fluid was in excess. Upon opening the heart itself there was presented extensive disease within the right side; in fact, the right auricle was almost entirely occluded by the thickened condition of the endocardium and deposit beneath it. The auriculo-ventricular valves also participated to a considerable extent in the diseased condition. During the early periods of my attendance upon the animal, I was inclined to the opinion that the case was one of suppressed

Strangles with cardiac complications. But upon making the *post-mortem* examination, I considered such extensive cardiac disease to be of so rare occurrence in young horses that I thought it worth while forwarding the heart to the Brown Institution for opinion, which I at once did after making a superficial examination myself.

[The heart forwarded by Mr. Barber is a good example of ulcerative Endo-carditis, a disease, especially in young animals, very frequently associated with Rheumatism.

On the left side slight thickening of the mitral valve, with extravasations of blood and commencing ulceration on the auricular surface, were the only abnormalities present.

Right ventricle healthy.

Right auricle and auricular surface of the tricuspid valve are covered with papilliform growths undergoing ulceration. The right auricle is entirely filled with a large organized clot, which has become firmly adherent to the interventricular septum.

The clot is laminated on the external surface, while the interior has undergone fibroid change.]

EQUINE RABIES.

BY A. W. BRIGGS, M.R.C.V.S., HALIFAX, YORKSHIRE.

JULY 8th, 1882.—I was consulted by Messrs. Greenwood and Buckley, of this town, and elicited the following items:—

Brindled bull-terrier dog, property of this firm, observed to be exhibiting extraordinary and aggressive symptoms during past day or two. Owners decided to have the dog shot. The dog was at large in the stable, which at this time contained grey mare, bay mare, and bay pony (mare). The first shot was not fatal—the bullet entering the dog's thigh. This infuriated the animal, which immediately attacked grey mare and bay pony, biting both on the legs. The dog was subsequently despatched.

Suspecting Rabies, I decided to make a *post-mortem* examination of dog, with a view of observing contents of stomach. I found this viscus distended with foreign material—straw being the predominating element—and to such an extent that, when the stomach was stripped from this foreign substance, there

remained a complete stomachial mould. [In all the *post-mortem* examinations that I have made of rabid dogs, I have, without exception, found this singular and peculiar condition of the stomach.]

Examination of grey mare revealed one slight punctured wound on the outer surface of near hind fetlock. There were several, though superficial, wounds on legs of pony. These several wounds were deeply cauterised with nitrate of silver, and the animals continued in ordinary work.

August 17th, 1882.—I was requested to visit the said grey mare, as she was lame. Found her lame of near hind leg, which she lifted with a peculiar snatching action. For some time I could not localise the seat of lameness, until I happened to touch the outer surface of fetlock, when the mare immediately repeated the snatching action to which I have just referred. On approaching the mare's head I found her slightly snappish and cross, with an expression of face entirely new to me. Pulse 45, full, and somewhat hard. I informed the owners that I suspected Rabies, but as I was undecided it was resolved to turn the mare out at grass in the country. This was done.

August 18th, 1882.—Sent for in great haste to visit grey mare. Found her in field, too furious to be approached. On seeing my own mare as I drove past the field, she gave vent to successive cries—more like the screams of a woman in pain than any other phenomena to which I can liken them. There was well-marked paralysis of the lower lips, and of the posterior extremities. She would make a futile attempt to graze ; then, suddenly, as though she had seen or heard something frightful, she would look up, with a startled expression of face ; scream in a most unnatural voice, and break into a gallop. Scarcely would she have proceeded ten yards, however, before her hind fetlocks would knuckle over, when she either fell to the ground or came to a complete standstill. The superficial muscles quivered as though in tetanic spasms, and the surface of the body was bedewed with sweat. She would micturate (the amount of urine voided being very small), or attempt to do so every few minutes. These phenomena were repeated with startling rapidity until the mare appeared thoroughly exhausted and paused for rest, but in vain, for the

paroxysms were renewed with increased vigour. She constantly endeavoured to bite the affected fetlock, and when near the wall of the stable would beat her head repeatedly against it. She was shot.

September 19th, 1882.—On this day I was requested to visit pony mare. She was in stable, and I at once recognised that peculiar expression of face that was so marked a feature of the last case. Pulse 42, full and hard. When touched, or in any way startled, her hind fetlocks knuckled, and gave warning of approaching paralysis. A few hours later I saw her again, and found the symptoms greatly aggravated—pulse 64; paralysis of posterior extremities complete, the pony being unable to rise, and when assisted could not stand unsupported. Frequent attempts at micturition. No inclination to bite. Owners decided to have her destroyed at this period, and she was shot.

The grey mare was aged, and the pony mare four years old. In neither case was salivation present.

October 6th, 1883.—2.30 a.m. Requested to visit brown mare, aged, the property of Mr. Joseph Frusher, of this town. The mare had been working in double harness up to 8 p.m. of day previous, although off her feed. On arrival at stable I found the animal restless, pawing and stamping with the fore and hind feet alternately, with slight sweating at flanks; every few seconds she snapped at her off shoulder, on the point of which she had inflicted a slight wound with her teeth. I pointed out this wound to the owner, and he approached her to examine it, when the mare rushed at him with open mouth.

[I may here mention that, owing to a serious outbreak of Rabies Canina in the town, I was induced to write to the local papers of August 18th, 1883, warning the public of the danger to their dogs and to themselves, and advising the exercise of precautionary measures. Two or three days subsequent to this date (August 18th), a Scotch terrier dog, the property of my client, showed symptoms such as I had described in my contribution, and even went so far as to lay hold of his master's trousers. The dog was at once destroyed as being rabid.]

As I was cognisant of the circumstances attending this dog's death, I began to suspect that I had a case of Rabies to deal

with, and I acquainted my client with my suspicion. He, however, informed me that only half an hour previously he had given her a draught without the exhibition, on her part, of any aggressive symptoms, and subsequently thinking she had a cold, had applied mustard to her throat. He was of opinion that the mare's restlessness and extraordinary behaviour were due to the application of the mustard, and I was fain to acquiesce in this to a certain extent.

The mare's head was now secured with a rope, and I took the pulse—47, full and hard. Ms. xl. inject morph. hypoderm. (followed by injections per rectum,) of Tinct. opii and Tinct. aconite were administered, but without lasting benefit. Rapidly the symptoms became aggravated, until at six a.m. the patient was in a profuse perspiration, pulse 78, pupils dilated, accumulation of frothy saliva at mouth, cutaneous quivering, the poor animal never remaining still for a single moment; occasionally recumbent, but almost immediately resuming the standing posture. She micturated, or attempted to micturate, every few minutes, and the expression of face was just what I have referred to in the other two cases, and which I cannot describe otherwise than as "expectant." Suddenly she would grasp the skin of either shoulder between her teeth and endeavour to tear it from its seat, and ultimately she succeeded in denuding both shoulder-points of skin. At 7.30 the pulse was 86, full and hard. Up to 12.30, when she was destroyed, there was no alleviation of the foregoing symptoms, and it was evident that unless put out of her misery, she would eventually die of exhaustion. In this case there was no paralysis.

THE INFLUENCE OF HEREDITY AND CONTAGION ON THE PROPAGATION OF TUBERCULOSIS.

(*Continued from page* 251.)

The infrequency of the exceptional propagation of the lesions of Tuberculosis in all the living tissues of the organism, leads us to suppose that the cause of the disease is due to an obnoxious substance which may penetrate by different channels into the

bodies of animals, and which, no matter where it fixes itself, gives rise to local nutrition-disturbance, resulting in the anatomo-pathological troubles just described. The latter may remain localised, or they may become extended, being propagated most frequently by way of the lymphatics, more rarely by the blood-vessels. From this fact we may conclude that, once developed in an individual, this malady may be propagated in the organs. Consequently, it belongs to the group of *infectious maladies.*

By microscopical analysis of the neoplasms of Tuberculosis, it is recognised that they are composed of:

a. Connective tissue of new formation, but of the ordinary texture, which sometimes is only developed in inconsiderable quantity, in other cases in such abundance that the diseased lungs may acquire a weight of from twenty-five to fifty kilogrammes (fifty-five to 110 pounds).

b. Connective-tissue vegetations, interspersed with variable-sized centres containing the *détritus* of tissues, more or less broken up. With the production of these centres is at first remarked the appearance of hæmorrhagic points, which gradually change their character and soon assume a vitreous aspect—a greyish-blue colour, and have the consistency of old Dutch cheese or of mortar.

These two forms of connective-tissue neoplasm offer a marked tendency to become transformed into osseous tissue; we may even sometimes observe bony tissue of new formation and completely formed, as is at times noted in Tuberculosis of the diploë. Centres of ossification have also been remarked on the pericardium and in the walls of blood-vessels of animals affected with the disease. The tendency to this transformation is otherwise indicated by the presence of giant cells, as well as by the deposition in these neoplasms of calcareous and fatty matters.

c. Sarcomatous neoplasms or tuberculous nodosities, properly speaking. The latter are composed of a connective-tissue stroma provided with blood-vessels, and interspersed with round-shaped or fusiform lymphoid elements and a mass of cells. When these neoplasms are recently formed, they are most frequently surrounded by a zone of blood-vessels, the peripheral portion of the

cellular mass being formed by cells with well-defined contours and some free nuclei. In the central part of this mass are observed cells less distinct, with more numerous free nuclei; these soon undergo degeneration. When this process commences, the cells assume an opaque appearance, their protoplasm diminishes in quantity, and at the same time the nuclei become shrivelled.

These altered masses soon become infiltrated with calcareous matters, and are gradually transformed into an amorphous mass presenting all the characters of *bouilli.* In a tubercular nodule, as soon as all the cellular centres, the number of which is sometimes considerable, have undergone these transformations, calcareous infiltration invades the connective tissue in the vicinity, and the whole of the nodosity becomes cretaceous. The pleura becomes thickened in those places which are the seat of neoplasms, and is covered with and infiltrated by granulation cells.

The connective-tissue masses penetrate the pulmonary nodosities in the form of thick bundles, dividing into fine slender fasciculi.*

d. Tubercles or tubercular nodosities, the volume of which varies from that of a grain of millet to that of a fowl's egg. While the vegetations indicated under *a*, *b*, and *c* are developed on the surface of organs, and especially on serous membranes, these latter neoplasms (the tubercles) are produced in the substance of the parenchyma, where they are disseminated or aggregated in more or less considerable masses. At the commencement of their formation, these tubercles are translucid and of small dimensions; later, they increase by the juxtaposition of other tuberculous neoplasms, and then form nodosities of variable volume.

The physical character of these tubercles gradually changes; they become at first grey, and afterwards are yellow in colour; they are destitute of blood-vessels, and are composed only of cells and nuclei without any solid intermediate substance; they rapidly become transformed into a calcareous or caseous mass. The latter is the transformation which is most frequent.

These tuberculous granulations are much more numerous in

* "Mittheilungen de Lwow, Kasan." Deutsche Zeitschrift für Thiermedicin, 1881, p. 3740.

the organ or infected tissue, than are the other granulations which might be confounded with them.

When a great number of the cretified or caseous tubercles are collected in a part, they form a mass resembling mortar slightly dried (concrements), or they constitute a caseous centre.

e. Ulcers of variable form and dimensions. At the first glance it appears somewhat strange to see one and the same cause give rise to processes so varied in their expression, but this surprise disappears when we analyse the alterations a little closer. Then we find that we have to do with one process only—proliferation of the connective tissue. The differences in the characters of the lesions are due either to the different activity of the intercellular substance, as well as the endothelial and connective-tissue cells, to the degree of disaggregation which occurs so readily in these neoplasms, so poor in intercellular substance, or, lastly, to the ulcerative process, the advent of which is favoured by the special seat of certain of these neoplasms.

The fibrillar vegetations, osseous or cartilaginous, are developed where the connective tissue is abundant, particularly between the pulmonary lobules, and in bones and cartilages.

The cells and nuclei, without connective-tissue stroma interposed, are met with in the tissues in which the epithelial element predominates, as, for example, in the pulmonary alveoli, on the internal membrane of vessels, etc.

With regard to the simultaneous development of cellular and fibrillar vegetations, this is observed on the serous and mucous membranes; it is on the latter that we most frequently meet with the ulcerative process.

Although the irritating agent which determines these different lesions is the same, yet the effect it produces varies according to the state of irritability of the tissues—that is to say, the more or less active participation of the elements of this process depends upon the soil in which the germ or morbid cause has to act.

The ulterior transformations of the neoplasms depend also upon the nature and condition of the soil.

Whether we accept this interpretation or adopt the opinion of Zeigler, who admits that the neoplasms are due to the emigra-

tion of the white cells which, through lack of vital energy, only exceptionally exceed the stage of development corresponding to the fibro-blasts and are rapidly destroyed, we shall scarcely find, in the histologic texture of these neoplasms, characters sufficiently precise to differentiate the pathological process of Tuberculosis from the other morbid processes which originate neoplasms analogous to those that characterise the malady now under consideration.

In glancing over the anatomo-pathological facts, it is remarked that all the infectious maladies which are propagated in a slow and insensible manner, or which invade by starts, but only exceptionally cause rapid death, produce manifestations which are not without a certain resemblance to each other. In these diseases the irritant is more particularly propagated by continuity of tissues or by the lymphatics, more rarely through the medium of the blood.

In Contagious Pleuro-pneumonia, the action of the morbid irritant is specially exerted upon the interlobular connective tissue of the lungs, and it causes an abundant proliferation of that tissue. In Glanders we met with analogous connective-tissue neoplasms, which present themselves in the form of cicatrices, described as independent or, better, primary Glander-neoplasies, by Leisering, who was the first to discover their existence in the lungs; analogous lesions are encountered in the subcutaneous connective tissue and the substance of the skin, when these are affected with Sclerosis or Elephantiasis; in the lungs and glandular organs are found small fibromata and sarcomata with or without very evident cells (veritable Tuberculosis neoplasms); there are found, besides, masses of cells. The skin and the mucous membranes are very often the seat of more or less extensive ulcers.

Add to these indications that, in recent times, there has been recognised a new infectious malady, Actinomykosis, which produces analogous manifestations in the bones to those observed in Tuberculosis and Glanders—viz., vegetations in the diploë, softening and thickening of the bones, caries, as well as nodules and nodosities in the lips and tongue, purulent and sanious masses in the heart, etc.

A considerable number of creatures which live and die as parasites in the domesticated animals may, after their death, undergo cretification, and then appear as nodules and nodosities resembling those under discussion; but the most remarkable of them are those which are found in the tissues which have been infested by parasites for some time, and which the latter have abandoned for a certain period. Among these nodular productions may be mentioned those described by Utz in the lungs of a sheep. The formation of these nodosities had been caused by filaria (*Pseudalius ovis pulmonalis*), which had sojourned in these organs during the winter. As soon as the worms and their young had quitted their autosity, there remained nothing more in the places previously inhabited by them than cells and nodules with their *détritus*, as well as lime salts infiltrating the tissues. These nests forsaken by the filaria have certainly been often erroneously described as the lesions of Tuberculosis or Glanders.

It results from all these considerations, that lesions of Tubercular Phthisis do not offer any specific features or really distinctive characters, either in their seat, form, volume, colour, or progress, nor yet in their histological elements. The true *criterium* of this disease should be sought for in the irritant which determines it, and which provokes its development (Cohnheim).

If we analyse the nodules or nodosities, the osteo-connective tissue vegetations, the ulcers and softening centres, and find in them the vegetable parasites named by Harz, the *Actinomyces bovis*, we are assured that we have to do with neither Glanders nor Tuberculosis, but are in presence of Actinomykosis.

Pflug is, therefore, perfectly justified in asking us to cease discussing the question as to whether the nodules and nodosities of the serous membranes, lungs, etc., which are met with in this disease, are sarcomatous, fibromatous, lymphomatous, or tubercular. This *savant* is also right in demanding that we abandon the definition of tubercle, such as is entertained at present; for, as he says, it is much more important to recognise the agent which determines diseases than to be acquainted with the microscopic characteristics of their lesions.

The anatomical diagnosis of Tuberculosis is, therefore, scarcely established in a sufficient manner, and very often it has to be completed by an etiological diagnosis. Thanks to the labours of Dr. Koch and his co-workers, we are now enabled to recognise the nosogenic agent of Tuberculosis in examining with the microscope the morbid matter, or even the secreted fluids. The microbe of the malady being found, we are certain of having to do with Tuberculosis.

We consider it necessary to again insist upon the fact, that the anatomo-pathological lesions of Tuberculosis may be present in all the living tissues, and that they represent different degrees of progressive and regressive evolution, varying according to the histological characters and the situation of the organs attacked. These lesions, nevertheless, are not met with in Tuberculosis only, but also in the course of other diseases; though these are affections which, profoundly affecting the organism, have generally a chronic course and belong to the infectious maladies.

The analogy which exists between these latter diseases and Tuberculosis, is a new proof that this belongs to the group of infectious diseases.

Although it is not yet well established as to the channel by which the infective principle of Tuberculosis penetrates the organism, it is nevertheless not improbable that it enters by the respiratory, digestive, and genito-urinary passages; but it can only fix itself in organs already predisposed, and especially in those which contain stagnant, or nearly stagnant fluids, such as mucus, lymph, etc.

The irritant cause penetrates the finest lymphatic vessels, and is then gradually propagated. Very often the morbigenous agent is isolated and enkysted, and the evolution of the morbid process is more or less delayed or completely checked.

To judge from clinical and anatomo-pathological facts, this irritant cause only occasions rapid death when the morbigenous principle penetrates the blood circulation, which is exceptional.

"The *period of incubation* cannot, from a clinical point of view, be established, as the malady can only be recognised with great difficulty at its commencement. In 1867, I inoculated tubercu-

lous cows with the pulmonary lymph derived from a cow affected with contagious Pleuro-pneumonia and Tuberculosis. Twenty-three days later, I found in the inoculation tumour real tubercles."*

There were *causes* for this disease, as beforetimes there were causes for the production of Glanders, Contagious Pleuro-pneumonia, and other morbid troubles. Ordinarily, these causes were sought for in the immediate neighbourhood of the diseased or suspected animal. Sometimes the pasturage, sometimes the stables, at other times the nature of the food (distillery grains, etc.) was blamed; in some instances other causes of the disease were put forward—such as certain functions more or less altered, as hypersecretion of milk, restricted sexual intercourse, etc.

(*To be continued.*)

PARTURIENT APOPLEXY IN CATTLE, COMMONLY KNOWN AS "MILK FEVER."

BY J. H. COX, M.R.C.V.S., ARMY VETERINARY DEPARTMENT, 5TH DRAGOON GUARDS.

NO disease, unless it is those of a contagious or anthracoid type, possesses more importance to stock-owners than the above. It is known in different counties by various synonyms, but the above stereotyped term will generally meet with recognition by those who make the bovine species their study. The appellation, "Milk Fever," accorded to this disease by the earlier writers, was founded on erroneous notions, and the term has been handed down as symbolic of a pathological condition which, if taken in its entirety, is at least misleading. The suppression of lactation, which is one of the chief characteristics of this disease, is not the absolute cause, but merely a symptom having its signification, and which can be accounted for; so that "Milk Fever," in its literal sense, is a misnomer.

I am led to introduce this subject on account of the many misgivings anent its pathology, treatment, etc., experienced by me during the last five or six years I was in private practice, and having met with somewhat unusual success, caused me to exercise my mind as to the rationale of the measures I was then

* "Receuil de Médicine Vétérinaire," September, 1868.

adopting, and to define, if possible, the true pathological conditions existent in this malady.

Parturient Apoplexy may be looked upon as a disease generated by domestication, being co-existent with improvement of our stock. Not that it is impossible for animals in a state of absolute nature to become affected. History, however, does not record this as a fact on which we can base any correct conclusions; so the inference to be drawn is, that it, in common with many other affections, owes its origin to the scientific interference of the biped—man. Having in a measure, if not altogether, induced its inception, it is naturally forced upon us to inaugurate remedial measures whereby we can control, or bring under our influence, if not direct subjugation, the elements which combine to produce a disease often so fatal in its results.

In order to render this subject as complete as possible, I shall divide it into seven heads: (1) Its pathology, (2) Causes in operation for production, (3) Symptoms, (4) Treatment, (5) *Post-mortem* appearances, (6) Prophylactic remedies, (7) The flesh of animals so affected in its relation to human food.

Its Pathology

appears to be somewhat veiled in obscurity, and in consequence many eminent veterinarians have devoted a large amount of time to unravelling its mystifications. Their arguments are forcible in themselves, but lack some of the essentialities necessary to place their reasonings beyond the sphere of doubt. Taking the consensus of opinion, we may correctly assume that we have to deal with a species of Apoplexy. The question arises as to how and by what means this morbid condition is generated. Without discussing the *pros* and *cons* of the many able exponents who have studied this disease, I may state that *acute anæmia*, as advanced by Dr. Fleming, finds many advocates. Some believe its origin to be due to a peculiar anatomical arrangement of the blood-vessels at the base of the brain; others claim that its inception is brought about by a kind of paralysis affecting the ganglionic system of nerves, arising from sympathetic action with the uterus; whilst there are those who consider it to be due to a

species of *fatty degeneration*. Having carefully studied these theories, I must confess that they do not, to my mind, fully meet the case. The several connecting links in the chain of evidence being wanting, opens out a whole vista of reflection as to whether these hypotheses are sufficient to account for the many phases of this affection.

The theory of *Thrombosis* or *Blood-clotting* seems to me to be more in accordance with what we find pourtrayed in the symptoms, etc., and as such I feel fully persuaded that this morbid condition is alone the *prima causa* of the existent phenomena in Parturient Apoplexy. Blood in a healthy condition is the vital fluid, which not only supports the frame and regulates waste of tissue generally, but it is the medium for conveyance of products which are the sequel of the disintegrative processes daily carried out in the animal economy. Under all varying conditions its *perfect* fluidity is expedient in order that the numerous channels which constitute the vascular system, more especially that designated capillary, may be filled and partially emptied, as observed in ordinary circulation. This harmonious action is always going on during the life of an animal, and it is only when some interference takes place that the confines of health have been passed. The tendency of blood to coagulate is known to most people, as ocular demonstration proves when it has left the body. Many theories accounting for this peculiar propensity have been formulated, but being somewhat foreign to our subject I shall pass them over. It is, however, not always essential for blood to leave the body in order to assume a form of solidity. The pathologist in his investigations often meets with instances where the blood has undergone this change without having atmospherical influence to account for it. Blood when it escapes into the areolar tissue often forms what are designated *thrombi* (from $\theta\rho o\mu\beta o\omega$, to clot). These clots assume different dimensions, in some instances large, in others being infinitesimal in their proportions. Several agencies are at work to produce Thrombosis; amongst others, heart-disease, blood-poisoning, mechanical obstruction, an undue amount of excrementitious material in the system, being prominent. It may also occur after hæmorrhage from softening and breaking up of the clots which form a temporary

or permanent arrestation to the flow of blood from the divided ends of vessels, and which clots are afterwards taken up by the circulation. *This latter condition is, in my opinion, the one which gives rise to Parturient Apoplexy.* There are certain conditions in the lives of animals when their blood exhibits a greater tendency to clot than is generally observed under ordinary circumstances. This change is said to be due to an increased amount of what, in common parlance, is known as the solid constituent of the blood, or in other words fibrin. (A new theory respecting this subject teaches us that fibrin does not actually form a component part of the blood, but is the result of a combination of two or more elements aided by a ferment. This in no way alters the force of my arguments anent the pathology of Parturient Apoplexy, but rather enhances them than otherwise; for if fibrin be not an integral portion of the blood, the factors which produce it are, which after all amounts to the same purpose, so far as our subject is concerned. To facilitate argument I shall adopt the word fibrin as an expression.) Over-fibrinated blood is a diseased state recognised as a concomitant, and in some cases a precursor, to some ailment, to which our domesticated animals are liable. It is also a normal condition accompanying the various changes of animal life, and perhaps one of the commonest instances is during the state of pregnancy or utero-gestation. At this period it may be said to be at its maximum, for under no other normal condition does it reach the same degree of magnitude; (this I must impress upon your readers as being a most important fact, for thereon hinges one of the most cogent arguments as tending to prove that the theory of Thrombosis is correct). This is particularly evidenced during the latter stages of this interesting process. During the time the fœtus is in embryo, this condition of blood has doubtless its special function in administering to embryonic requirements; but when no further demand is in requisition, or in other words, when the offspring shall have commenced to manufacture its own fibrin, by being separated from the parent trunk, the blood of the mother is surcharged with a material which, if not foreign to health, is at least prone to excite disease. Were it not for the excitation brought about in the effort of producing milk, and hence a large amount

of blood determined to the mammary gland for that purpose, we should more frequently have morbid evidence than we have. For it must be remembered that the mammary gland is endowed with powers of secreting a material allied to fibrin, and which constitutes the *casein* of the milk. This outlet for over-fibrinated blood acts as a safety-valve, and as a rule the mission is nobly fulfilled, particularly in deep-milkers. These powerful provisions of nature steadily pursue their course when unshackled by disease, but once a departure from the ordinary course of health takes place, we pass from a physiological state to that evidenced in the pathological.

Many writers claim that Parturient Apoplexy is engendered by the blood which formerly supplied the wants of the fœtus being thrown back on the system of the mother, but do not explain satisfactorily the changes which the circulatory medium undergoes. I do not believe that the bare fact of the blood being thus diverted in its course is sufficient to account for the changes observed in this disease. Nature in all her ramifications is too well regulated to admit of such disastrous consequences. If it were not so, cows at the first time of calving would be more liable to attacks than at any subsequent period; but such we know is not the case. It is only when the blood possesses in itself other products than those found in healthy fluid, that this sudden diversion has any deleterious consequences. *These morbid products are fully exemplified in Thrombosis.* It is a natural process for the escaped parturient blood in the uterus to undergo clotting, and many serious consequences are prevented by its being thoroughly carried out, but it is *unnatural* for the clots, or any portion of them, to find their way into the circulation. This fluid cannot perform the functions set apart for it if these small elements, which act as foreign agents, and around which healthy fluid is wont to adhere, find their *locus habitat* in its midst. Their natural outlet, either as clots or when they shall have undergone metamorphosis, is *per* the mouth of the womb, giving rise to the discharge so well known to stock-breeders.

A clot once having established itself in the circulation, already predisposed to take upon itself this condition, can, by becoming

broken up, form the nuclei of others, and so *ad infinitum*. To such an extent does this prevail in Parturient Apoplexy that the capillaries become engorged, and as a result we get a diminution in nerve tension, terminating sometimes in hæmorrhage in or about the brain and spinal cord. A slowing, as it were, of the circulation takes place, until at length the heart refuses to respond to the promptings of what nerve stimulus there is left, and the dreaded *finale—death*—stares us in the face. Long ere this happens we have evidences that the functions of the nervous system have received a considerable shock. The optic nerve no longer regulates vision. The auditory nerves cease to possess their influence. The muscles engaged in respiration perform their office with great difficulty; the lungs in consequence become only partially inflated, and the blood circulating in them is loaded with an over-carbonized material, which would be deleterious even to the most robust of animals. The intestinal tract, commencing with the stomach, loses its peristaltic action. The kidneys only very feebly give evidence of their existence. The bladder requires assistance in order to evacuate its contents. The mammary gland in no way fulfils the duty set apart for it. Even the muscles supporting and holding in position the jaws, lose their tonicity, and the lower jaw recedes from the upper. The whole system, in fact, seems to be in abeyance. Life just, and only just, may be said to exist. In no case have we a grander instance of nature combating disease.

Now arises the question why Parturient Apoplexy in the bovine tribe should be so well marked a feature, whilst in other orders of animals an almost perfect immunity is recognised. In the first place, I must draw the attention of your readers to the anatomical characters of the uterus. These alone, as compared with some animals, are sufficient to account for the predisposition to this disease. We have in the cow, besides the ordinary communications through the umbilical vessels, a series of small attachments by which the fœtus receives support. These nodular enlargements we recognise as *polycotyledons*, or *burrs* in ordinary language, and are rounded eminences highly endowed with blood-vessels centrifugally arranged: they serve the twofold purpose of supplying maternal and fœtal requirements. We

then have many centres from which Thrombosis receives its seat of ingestion. Each centre is liable during the act of parturition to rupture of some of its capillaries, and in some instances entire detachment follows. Thus the process of clotting has many starting-points, any one of which may form a nucleus of this disease. It will be said that other animals possess allied anatomical features without the same predisposition to become similarly affected. This is doubtless correct so far as mere structure goes, but development *alone* in this particular is not answerable for the morbid changes witnessed in Parturient Apoplexy.

Most observers are agreed that, as a rule, it does not make its appearance until after the third calf: this being true, why should immunity be so forcible in the first or second calf? The explanation to this is not difficult, for we know that in all animals the contractile power of the uterus, aided by the abdominal muscles and yellow elastic tissue connected with them, is greater during the first period of utero-gestation, or first calf, than at any later one, and that at each successive period of parturition becomes somewhat less vigorous in its attempts to assume the pre-conception state. Hence we find that in the sequence of events the danger of absorbing blood-clots becomes more prolific. It is by the uterus, with its collateral aid, possessing sufficient tonicity to speedily contract upon its contents, which after the birth of the offspring are merely the fœtal membranes and the escaped blood, that we possess an exemption from Parturient Apoplexy. The greater the contractile power, the less danger there is of any *materies morbi* entering the circulation. Ruptured ends of vessels, whether of cotyledons or umbilical vessels, must have their orifices firmly sealed by a clot or plug; otherwise, if their mouths are only partially closed, or if the force applied by the broken end of the vessels consequent upon the contraction of the uterus be imperfect, it is easy to understand that at least detached portions of these mechanical agents may enter the circulation and produce, in some form, symptoms analogous to Apoplexy. Further, the uterine vessels, after an animal has been once pregnant, become enlarged, with a tendency to increase in size at each successive period of utero-

gestation ; consequently we have, from this cause alone, a further liability to Thrombosis, as the vessels, from their increased calibre, afford an easier ingress to thrombi, without possessing a relatively increased power of contraction.

The almost absolute freedom from this disease possessed by some animals, is probably due to a combination of felicitous circumstances. In the first place, their condition of blood may be such that it only holds within itself a required proportion of fibrin necessary to animals in a state of utero-gestation. In the second, the debilitated, or want of contractile power of the uterus, is not so inherent in them as in others where nature has failed to observe the balance of health in such exact proportions. *Ergo*, this interesting process may, in some instances, give rise to no serious results, whilst in others disease had a prior existence, and only required the circumstances surrounding the act of labour to develop it.

Parturient Apoplexy in mares, horses, sheep, pigs, etc., is rarely seen. This, instead of being mysterious, only bears out what I consider to be the active cause of this disease. The act of labour in these animals is followed, as a rule, by rapid expulsion of the placental membranes. In no animal have we such evidence of delay at the post labour period as in the cow. In the mare the contractions of the womb and its accessories speedily expel the enveloping membranes of the fœtus. The same thing happens in other species of animals, although it may be in a lesser degree, but identical forces are exemplified. Such being the case, the broken ends of the vessels are immediately closed, and the clot is firmly held within the grip of their walls, and there is no absorption, but rather a barrier which prevents any deleterious material entering the circulation.

(*To be continued.*)

Editorial.

CONTAGIOUS PLEURO-PNEUMONIA OF CATTLE.

One of the questions discussed at the recent International Veterinary Congress at Brussels, and that which excited, perhaps, the liveliest and most extended discussion, was on the differential diagnosis and prophylactic measures relating to bovine Contagious Pleuro-pneumonia. As with the other questions, so with this; a commission composed of Professor Degive, of the Brussels Veterinary School; Professor Pütz, of Halle University; and M. Leblanc, Veterinary Surgeon, Paris, was appointed by the Organising Committee to draw up a report upon it, which was to serve as a basis for discussion and resolutions. The chief portion of the report was contributed by Degive, who, in an able and lucid dissertation on the malady, points out the symptoms which should differentiate this from similar disorders, and indicates the measures necessary for its prevention or suppression. Leblanc and Pütz contribute their share in the form of annexes to Degive's paper. Degive and Pütz are warm partisans of protective inoculation, and both give the strongest evidence in its favour; the former gives a bibliographic index of experiments and observations, which shows that of 6,805 inoculated animals exposed to infection, 181 became diseased, or 2·71 per cent., while of 2,426 non-inoculated and similarly exposed, 634 were attacked, or 26·13 per cent. Leblanc is not in favour of inoculation, and believes in the spontaneous origin of the disease.

At the discussion which ensued, the question of spontaneity formed one of the chief points. Pütz denied the spontaneous evolution of the malady, as did Liautard, Willems, Fleming, Tisserand, Cope, Locustaneo, Lindquist, Berdez, Lydtin, and others, while its spontaneity was upheld by Degive, Leblanc, Bouley, and Wehenkel. Bouley ranged himself with those who believed that the sporadic malady is very rare; Leblanc confessed that it was exceptional, while Degive and Wehenkel believed that it was possible. The latter declared that nothing seemed to him to be opposed to the admission of the direct genesis of the disease, and even of all inferior beings; he saw nothing impossible in this transformation—on the contrary, he believed it to be a reality. Ultimately, the question of spontaneity was evaded, and the prophylactic measures were discussed on the basis that the disease was *propagated* by contagion, which is very much the same thing as admitting that its existence depends upon its contagiousness. In view of the fact, however, that Locustaneo showed that the malady does not exist in Roumania, that Lindquist asserted that it was unknown in Sweden, Norway, and Finland, unless when imported into these countries, that Berdez insisted that in Switzerland it was a purely contagious disease, and its introduction could always be traced; that there are portions of the world where it is yet unknown, and where it will not be seen unless it is carried thereto from infected

countries, it is, indeed, astonishing to find veterinarians who still believe hat Contagious Pleuro-pneumonia can arise *de novo*. If certain germs, originally of a different kind to those which occasion this disease, can be transformed into the specific germs, why does not this transformation occur in Roumania, Sweden, Norway, Finland, North America, the greater portion of the United States, and other countries still exempt from its ravages? There is absolutely no evidence that the disease ever does arise by any transformation of germs; all the facts—and they are very numerous—are opposed to such a notion, and go to support the belief entertained by all those who have had the best opportunities for studying the subject, that it is a purely contagious malady in its origin and propagation.

The value of inoculation as a prophylactic measure was generally recognised, and the question as to whether it might perpetuate the disease, by healthy animals becoming infected from those inoculated, appeared to be decided in the negative. Dr. Willems, of Hasselt, who first introduced inoculation for this disease, was present, and delivered a most interesting discourse on the operation and its results.

The other prophylactic measures proposed by the reporters were accepted; some of these measures were based on the understanding that the infection may be carried by media other than diseased animals.

The two important points in the discussion were not, in the opinion of some of those attending the Congress, satisfactorily determined. The spontaneous origin of the disease should not have been left a matter for doubt; for if this is possible, surely suppressive measures must be of no great moment. If the malady may arise sporadically immediately after it has, at great expense and inconvenience, been suppressed, surely all this expense and inconvenience have been incurred for nothing. And if infection is only conveyed by the living diseased animal, what need is there to incur the grave annoyance, trouble and expense attending disinfection of cowsheds, railway trucks, and steam-boats, and the precautions with regard to offal, flesh, and other products of cattle slaughtered because of this contagion? With the painful and very ample experience Europe has had of this disease, surely the Congress, composed as it was of the *élite* of the veterinary profession, might have arrived at a satisfactory conclusion on these points! There are those in this country who are opposed to all sanitary restrictions with regard to these contagious diseases, and they found their opposition on the idea that such disorders may be spontaneously generated. The indecision of the Congress on this point might still further strengthen their opposition, and seriously embarrass the efforts of those who, certain that spontaneity in transmissible diseases is a myth, are labouring to extinguish them. That these sanitarians are working in the right direction, we have not a shadow of doubt; and it is because their efforts are likely to be marred by the philosophical tendencies of a very small minority, whom facts do not favour, that the indecision of the Congress is to be regretted.

THE SALICYLATE TREATMENT FOR HORSES.

A CORRESPONDENT of the *Boston Medical and Surgical Journal* communicates a very interesting experience of the effects produced on a horse suffering from Rheumatism, by the salicylate of soda. The animal in question was stabled one evening, after a hard day's work, in apparently perfect condition. The next morning he was quite lame, was suffering much from pain, and the left hind fetlock joint was swollen, hot and tender on pressure, the tissues over the pastern down to the hoof also being inflamed. These signs of injury became increasingly apparent as the day advanced, and the discomfort undergone by the horse grew rapidly greater, the unhappy animal making the utmost efforts to relieve the affected foot from pressure. Appetite was altogether lost. For four days, we are informed, the routine stable treatment and hot fomentations, succeeded by cold-water bandages, was tried in vain, when, under the belief that Acute Rheumatism had attacked the horse, his owner resolved to give him salicylate treatment. Accordingly, a first dose of two drachms of soda salicylate was administered, followed by drachm doses at two-hourly intervals afterwards, and at the end of a few hours—one ounce of the remedy having then been taken—very marked improvement of symptoms was manifest, heat, swelling, and pain rapidly subsided, and after two days of the novel treatment recovery was almost complete, the animal being at his usual work ten days from the first administration of the drug. The writer of the letter containing this history avers that on another similar occasion he would at once give the salicylate in larger doses, and he chronicles the singular fact that its employment on the occasion referred to produced none of the copious sweating which follows its exhibition in the human subject. Another recent issue of the *Boston Medical and Surgical Journal* quotes a note from the *Quarterly Therapeutic Review* to the effect that methyl salicylate (oil of winter green), mixed with an equal quantity of olive oil or linimentum saponis, applied externally to inflamed joints affected by Acute Rheumatism, affords instant relief, and, having a pleasant odour, its use is very agreeable.

THE NATURAL HISTORY OF THE LIVER-FLUKE AND THE PREVENTION OF ROT.

BY A. P. THOMAS, M.A., F.L.S., BALLIOL COLLEGE, OXFORD; PROFESSOR OF NATURAL SCIENCE IN THE UNIVERSITY COLLEGE, AUCKLAND, NEW ZEALAND.

(*Continued from page* 286).

If there are fluke-eggs on the ground, the embryos hatched out of those will gain entrance to the *Limnæus truncatulus* living in wet places. Owing to the habit which this particular snail has of living so much out of the water, either on the banks of ditches, or further away towards the centre of the fields if they are damp enough, the cercariæ (the larval forms destined to enter the sheep) will, on leaving their host, form their cysts on the grass in the places where they will have the best chance of being transferred to the sheep grazing on the ground.

Man himself sometimes serves as host to the Liver-fluke, and in this case the cysts containing the young flukes are probably eaten with watercress.

Growth and Duration of Life of the Fluke of the Sheep.—From observations which I need not describe here, as they have been given in a former report,* it appears probable that at least six weeks elapse from the time the fluke is swallowed by the sheep before the parasite becomes adult and begins to produce eggs. A very great increase in bulk occurs, for when the young fluke is introduced it is perhaps only $\frac{1}{80}$th of an inch in length, whereas the adult fluke reaches an inch or an inch and a third. A change occurs also in the form of the body, as will be seen from Figs. 14, 15, 16, and 17; it is due to the more rapid growth of the hind-part of the body, which contains the reproductive organs (Fig. 18).

Of great practical importance is the question how long the fluke remains alive within the sheep. For it will depend upon the length of this period whether or not it is worth while trying to keep the infected animals alive until the life of the fluke has reached its natural limit.

The Liver-fluke is supposed by some to pass out of the sheep at the beginning of summer. If this were the case, its life would not last more than three-quarters of a year. Gerlach states that the fluke always passes out in the months of June and July, but Pech† says that he has seen flukes pass out from rotten sheep in autumn and winter, and suggests that they may have lived in the sheep more than a year. I have examined the droppings of sheep in June sent by the kindness of a veterinary surgeon, which were asserted to contain dead flukes, but the so-called flukes proved, on microscopic examination, to be masses of discoloured mucus. From my own observations I am able to say that the flukes do not always pass out from the sheep in the summer-time. There is no time of the year when sheep-livers containing flukes which are clearly several months old, cannot be obtained. In a former report‡ a case was described in which the flukes within a sheep were proved to have lived for a longer period than one year. The animal took the rot in the autumn of 1879, and when it was killed on the 18th of December, 1880, its liver was found to be still full of flukes.

Summary of the Life-history.—The adult fluke in the liver of the sheep produces enormous numbers of eggs, which are distributed with the droppings of the sheep. If these eggs have moisture and a suitable degree of warmth they continue to live, and in each is formed an *embryo*. The embryo leaves the egg and swims in search of the particular snail, *Limnæus truncatulus*, within which its future life and growth takes place. The embryo bores into the snail, and then grows into the form which is called a *sporocyst*. The sporocyst gives rise to the second generation. This generation is known as *redia*. The rediæ in turn produce the third generation, which has the form of a tadpole, and is called *cercaria*. The cercariæ quit the snail, and enclose themselves in envelopes or cysts, which are attached to the grass. When the grass to which the cysts adhere is eaten by the sheep, or other suitable host, the young Liver-fluke comes out of the cyst and takes up its abode in the liver of its host, and the fatal circle is thus completed.

It will be seen, therefore, that the Fluke-disease is a disease which alternates between a particular snail and the sheep. A sheep cannot take the infection *directly* from another sheep, nor can one snail take it *directly* from another snail. The sheep, by spreading the eggs of the fluke, gives the infection to the snail, and the snail in turn, by harbouring and distributing the cercariæ, conveys the infection to the sheep.

* Journal of the Royal Agricultural Society, 1881, p. 25.

† Der Thierarzt, 1873, p. 87.

‡ Journal of the Royal Agricultural Society, 1881, p. 26.

Part III.—The Prevention of Rot.

Now that we have followed the whole of the life-history of the parasite, and know where it is to be found and to be fought, at all the stages of its varied existence, we are in a position to discuss the important practical bearings of the question. We may therefore proceed with the consideration of the preventive measures, which, if carefully carried out, will, it is believed, enable us to reduce the losses to a comparatively insignificant amount; and eventually, if all farmers will combine their efforts, totally stamp out the disease, so that it may become altogether a thing of the past.

Let me first state the conditions necessary for the existence of Liver-rot, as proved by the foregoing research, and discuss the measures which will prevent the conditions being satisfied, and therefore prevent the disease itself; and lastly, give a summary of the preventive measures.

The conditions necessary for the existence of Liver-rot in any given locality are as follows:—

1. There must be fluke-eggs on the ground.
2. There must be wet ground or water during the warmer weather for the eggs to hatch in.
3. A particular snail called *Limnæus truncatulus* must be present.
4. Sheep or other animals must be allowed to feed on the same ground, without proper precautions being taken.

If any one of these conditions remains unsatisfied there can be no Fluke-disease or Liver-rot in the locality. Let us consider these conditions in detail.

1*st Condition. There must be fluke-eggs on the ground.*—We have already seen that the fluke whilst in the liver of the sheep, rabbit, or other animal produces vast quantities of minute eggs, and that these pass into the intestines and are distributed in myriads wherever the droppings fall. So that wherever fluked sheep are kept, there we shall have fluke-eggs.

In some districts the fluke is always to be found, though in dry seasons it may become scarce. Still a few exist, and these are quite sufficient to keep up the breed until a wet season occurs, when, under the favourable influence of moisture, they increase so rapidly as to produce a devastating outbreak.

But the Fluke-disease may appear in quarters where it was previously unknown, and surprise is frequently expressed at the way in which it suddenly breaks out in isolated flocks. The infection, however, may be introduced in many ways. Eggs may be brought in manure; or adhering to the feet of men, horses, or dogs; or they may be conveyed by running water, and especially by floods. Rabbits and hares, too, have much to answer for in distributing the parasite. The same account is given everywhere of the way in which rabbits suffer from rot, and in some neighbourhoods about Oxford they were almost exterminated by it in 1879-80. I have received on several occasions fluked rabbits, and have known them to contain each as many as forty or fifty flukes. Wherever they go, and they often wander far from home, the eggs of the fluke are distributed in their droppings. In a case where infection had suddenly broken out in an isolated flock of sheep at Whytham, near Oxford, I was able to show that the rabbits from the neighbouring woods had introduced the disease.

So wonderfully fertile is the Liver-fluke, that if every egg were safely hatched out and the full average multiplication in the snail were attained, a single rotten sheep might pass enough eggs to eventually give the rot badly to all the sheep in England, some thirty millions in number. Fortunately the chances are very greatly against any flukes being reared from any particular egg. Still, we must do all we can to increase these adverse chances, and must

begin the prevention of rot by waging a war of extermination against the eggs. If we can destroy or, better still, render impossible the production of nine out of every ten fluke-eggs which are annually scattered in England, we shall so mitigate the rot, that instead of a sheep being infested with two or three hundred flukes, it will on the average contain only twenty or thirty. Now whilst two or three hundred flukes would destroy a sheep, twenty or thirty will do comparatively little harm.

The production of fluke-eggs may of course be prevented by killing the sheep as soon as it is known that it is suffering from the rot. Extreme as this measure may seem to some, if the sheep are at all badly rotted it will prove the most economical in the end, especially if the disease is discovered at an early stage. It is better to lose a little at the outset than to run the risk of having finally to sell the sheep for a little more than the price of the skin. The quality of the meat will only be slightly deteriorated at first, and there will then be no objection to its use for food. But as the disease advances, the meat will become less and less wholesome, and at last become totally unfit for human consumption.

There is no known cure for the rot, for the fluke inhabits the liver, an organ which can only be reached through the blood, and it is impossible to prescribe any drug which will harm the fluke without harming the sheep at the same time. It is quite true that if the sheep does not contain too many flukes, it may recover when the natural life of the fluke comes to an end, provided its strength is kept up by a liberal diet. But the life of the fluke may last so long, that even if this method prove successful, it will be very costly, and it is scarcely worth while making the attempt, unless the sheep be of a specially valuable breed, or unless there is reason to believe that it contains only a small number of flukes. If the owner decides to try to keep the infected flocks, they should not be allowed to remain on wet ground, for then the fluke-eggs would have a favourable place for hatching, and the result might be a harvest of death reaped in the following season.

If rotten sheep are kept at all, let them be placed on dry ground, where the eggs cannot meet with the moisture necessary for their development, and where there is no chance of their being washed into ditches, ponds, or streams. A brook may easily carry down with its current to land lying at a lower level.

If there is reason to suspect that a flock of sheep is attacked with Liver-rot, either one of the most suspicious-looking should be killed, and its liver examined for flukes; or if a microscope is available, the point will be more readily decided by taking a very small quantity of the droppings of the sheep on the point of a penknife, mixing it with a little water on a glass slide, and examining for fluke-eggs. If the animal contains many flukes, ever so small a quantity of the droppings will show several eggs, easily recognised as eggs on account of their perfectly definite shape and yellowish-brown colour. This method, of course, will only serve to prove the presence of the flukes when the disease has been taken for some time, for the fluke does not begin to produce eggs until it has been in the sheep some six weeks.

The manure of fluked animals must never be placed on wet ground. If the sheep are kept in a yard, the manure should be collected, and a little coal-tar oil may be added to prevent the development of the eggs; or it should be kept for a considerable time before it is spread on the fields. The livers of rotten sheep should be destroyed, for they contain enormous numbers of eggs; perhaps the simplest way of getting rid of them will be to bury them deep. When livers are not very much injured by the fluke, they are often given dogs, and there is no great objection to this, *provided they be well cooked first.* Otherwise, if they are given in a raw state, the contained eggs will pass uninjured through the dog, and be distributed by it.

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2nd Condition. There must be wet ground or water during the warmer weather for the eggs to hatch in.—If the eggs of the Liver-fluke are to be hatched, they must be in water, or at least be kept moist during some weeks of warm weather, or even for some months if the temperature be lower. If the eggs are once thoroughly dried, their vitality is destroyed, the side of the shell being usually crushed in.

Ground is often, with reference to the rot, spoken of as "sound," or, on the contrary, as "rotting." When the droppings containing fluke-eggs fall on to a field, the rain will distribute the eggs over the surface, washing them down to the roots of the grass. If the soil is light and sandy or porous, the ground will be "sound," for the water will filter into the earth, leaving the eggs on the surface, where they will get dried, and so be destroyed. If, on the other hand, the soil is heavy and clayey, so that the rain-water does not sink into the earth, but flows along the surface, the ground is "rotting." For, as the water flows over the surface, it carries the fluke-eggs along with it, and deposits them in ditches, holes, marshy places, furrows where the water stands, all of them places where the eggs will hatch.

The obvious remedy for this evil is to drain the land thoroughly and efficiently, and this will not only do much to prevent the rot, but will have the further advantage of greatly improving the herbage.

Where it is not practicable to drain the land at once, either salt or lime may be scattered over the surface. Both these substances will destroy the embryos of the fluke, and at a later period the cysts when attached to the grass. And, still further, they will destroy the snails which serve as hosts to the intermediate forms of the Liver-fluke. The freedom from rot of sheep feeding on salt-marshes is well known, and is now shown to be due to the poisonous action of the salt on the embryos, sporocyst, redia, cercaria, and cyst, and to its similar action on *Limnæus truncatulus* itself.*

Even a weak solution of salt in water (containing only $\frac{3}{4}$ per cent. of salt) proves fatal to this snail. Dressings of salt have the advantage over lime in not spoiling the grass for immediate use, whereas lime will do so. It may, however, at times be better for the land itself that lime should be applied. It will be for the farmer to decide which dressing should be used.

It is naturally of much importance that the salt or lime should be distributed at the right time of the year, when fluke-germs and snails are present in the greatest numbers. The snail buries itself in mud or soil in the winter-time, and owing to the cold no embryos are hatched out at that time. If the weather be warm in April, it is possible that a few may be hatched out towards the end of the month, but they will not be numerous. In May, however, greater numbers will be hatched, and still more in June and July. These two months are the time of the year when the snails are most liable to be infected. As more eggs are distributed through the whole of the summer by fluked animals, it is clear, of course, that the production of embryos, though in less numbers, will continue from August until the time when the development is checked by autumnal cold.

Even under the most favourable circumstances it will be seven weeks before the cercariæ are formed within the snail so as to be ready for transference to the sheep. Animals may take the rot as early as June, but this is not of frequent occurrence. In July, however, the germs or cysts on the grass become more numerous, though still comparatively scarce. In August more will be found, but it is in the months of September and October that they are most numerous. These are the most dangerous months.

* It may be worth noting that watercress should be steeped in salt and water before it is eaten, so as to guard against any possible infection from adhering cysts of the Liver-fluke.

The Northumberland farmers hold that the end of October is the most fatal time for their district. In November the germs are less numerous, and rot is less frequently taken, though there are one or two instances in which the disease has been clearly proved to have been taken as late as the beginning of December.

Some farmers are inclined to place the dangerous period earlier in the year, dating from the time of a flood in June or July. It may be quite correct to attribute the outbreak to the flood, but the date of the flood may simply be the time when the snails are infected, and not when the sheep take the rot. The cercariæ would probably be matured some two months later, so that the true date of the infection of the sheep would be August or September.

In the case of snails which become infected late in the year, the different generations will not have time to grow, multiply and become mature before the cold of the closing year drives the snail into its winter quarters, and suspends for the time the life of the parasites. It is a question of some interest whether the snail and its included parasites can together survive the winter, and complete their growth in the following spring. If the parasites are numerous or are far advanced, the snail is so much weakened that, fortunately for us, it will probably succumb to the rigours of the winter. But there can be little doubt that some few will retain their vitality throughout the winter, and with the return of milder weather a fresh start will be made, and that at length the forms destined to be transferred to the sheep will be matured. Some of the cases of early infection in June are probably due to parasites which have survived the winter in the snail.

June and July are, then, the principal but not the only months in which we are to wage war against the embryos; the latter part of August, September and October, are the months in which especially to destroy the germs on the grass ready for transference to the sheep.

3rd Condition. A particular snail called Limnæus truncatulus must be present.—There seems to be only one snail in England * which can serve as host to intermediate forms of the Liver-fluke. Consequently, wherever this snail is absent there can be no Liver-rot, and if we could succeed in exterminating it, we should render it impossible for the disease to exist in England.

The snail, however, is small, and hence difficult of detection, so that all we can hope to do is to limit its numbers in any given locality. There are several ways in which this may be done. First of all, the land should be well drained. I have known an instance in which *Limnæus truncatulus* was found in a small boggy place towards the middle of a field, and was there the means of propagating the fluke. When, however, the marshy place was drained, the snail disappeared from the ground, and with it the Fluke-disease. A dressing of lime or salt will, as already mentioned, destroy the snails, and, if applied to the ground for this purpose, it should be scattered especially on or near any marshy places, or along the margins of ditches, ponds, or streams, out of which the snail will naturally crawl.

A flood may bring the snail down in quantities, and scatter it broadcast over fields which were previously free from it. The snails may

* The snail *L. truncatulus* has a very wide distribution, being found, according to Dr. Gwyn-Jeffreys, throughout Europe, in North Asia, Morocco, Algeria, Madeira, and (doubtfully) Guatemala. The Liver-fluke, however, has a much wider distribution, and it follows that there must be in certain countries, supposing *L. truncatulus* to be *really* absent, another snail which can replace it as host. Thus the fluke is found in the United States, where *L. truncatulus* is said not to occur, though several other kinds of snails belonging to the genus *Limnæus* are found. In Australia the fluke occurs both in sheep and in human beings. *L. truncatulus* is stated not to exist there, but eleven kinds of *Limnæi* are recorded. It is probable that in both these countries some other species of *Limnæus* serves as host.

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be infected before they are brought down by the flood, and infection be thus introduced into new areas; or they may become infected subsequently if there are eggs on the ground. They are drifted everywhere. Flooded land should therefore have the salt or lime scattered over the whole of its surface when the waters have gone down.

FIG. 19.—The snail, *Limnæus truncatulus*, which serves as host to the sporocyst, redia, and growing cercaria of the Liver-fluke. The drawing is magnified, and the true length is shown by the line at its side. (Original.—A. P. T.)

FIG. 20.—*Limnæus trancatulus*, of natural size. (A. P. T.)

4th Condition. Sheep or other animals must not be allowed to feed on the same ground without proper precautions being taken.—If any ground is likely to give the rot to sheep, the simplest plan would, of course, be not to allow them to graze upon it, but to keep them on drier and safer land. But such advice would seem a mockery in certain districts, where all the land is more or less unsound. A great deal of such ground would probably be found to be heavy, and in urgent need of drainage. But it must always be remembered that even a sound, porous soil may become dangerous in a season of excessive wet, if it lies so low that it becomes clogged with water which cannot be carried off fast enough by rivers, or if it is flooded.

If it is necessary to send sheep on to dangerous ground, great care should be exercised in observing the following precautions:—

Salt or lime may be scattered on the surface at the proper season to destroy the germs, as already explained.

Salt should also be used in another way. It has long been known that salt is a preventive when given to the sheep with their food, but many farmers have been slow to use it. There are two reasons for its action. First, it acts injuriously upon the germs of the Liver-fluke which may be swallowed; and, secondly, it improves the general health of the sheep, enabling them to digest the germs better. In addition to the salt, dry food should be given, as this will, by keeping them in good health, greatly improve their chance of digesting the young flukes. If the salt be mixed with the dry food, each sheep is more likely to secure its proper proportion, and no more, than if lumps of rock-salt are simply put down for the sheep to lick when they please. Care must, however, be taken that breeding-ewes do not get too much.

It will scarcely be necessary to give salt to them after November, so far as this particular purpose is concerned, for there will then be very few of the germs or cysts about on the grass.

In this connection may be mentioned an experiment recently tried by Mr. T. P. Heath, veterinary officer for Exeter and Devon, and published in the

Western Morning News for October 14th, 1882. It is especially valuable on account of its definite and exact nature. No sheep had been kept in safety on or near Mr. Heath's farm within living memory. A number of unaffected sheep were selected, and divided into two flocks. One flock was kept as all other farmers' sheep are kept; to each sheep of the other flock was given a quarter of an ounce of common salt, well mixed with half a pint of oats every day that they fed on the *permanent pastures*. Whilst they were feeding on turnips, vetches, etc., this corn and salt allowance was entirely dispensed with. All the sheep were killed in summer. The half fed with corn and salt were quite sound; the other half had flukes in their livers, so that they could not have been kept through another winter. Mr. Heath had no cause of complaint with his speculation, as the subject of his experiment realised a profit of about 50s. per head, and the cost of corn and salt did not exceed 3s. each.

Sheep must not be allowed to graze too closely, for they are then specially liable to take the rot. Not only does close-grazing imply that food is scanty, and that the health, and therefore the digestive power, of the sheep is likely to suffer in consequence, but the sheep will pick up more fluke-germs. The snail, in crawling about in the grass, keeps as a rule at the bottom, close to the roots; the cercariæ accordingly, on leaving the snail and proceeding to form their cysts or envelopes, will attach themselves to the stalks of grass or other plants, close to the ground. Hence the closer the sheep grazes, the more of these cysts it is likely to pick up. There are many instances on record, and I have myself met with others, in which "hog-jawed" sheep, which are unable to graze closely, have escaped infection when all the rest of the flock have been rotted. The special liability of sheep to the fluke seems in some measure to be due to the fact that it can graze more closely than any other domestic animal.

Summary of Preventive Measures.—I may now give a summary of the preventive measures which have been suggested above.

1. All eggs of the Liver-fluke must be rigorously destroyed; manure of rotten sheep, or other rotten animal, must not be put on wet ground.
2. If sheep are rotten, let them be sent to the butcher at once, unless they are specially valuable and are not badly fluked. If kept, they must not be put on to wet ground.
3. Care must be taken to avoid introducing eggs of the fluke, either with manure, or with fluked sheep, or in any other way. Rabbits and hares must not be allowed to introduce the eggs.
4. All heavy or wet ground must be thoroughly drained.
5. Dressings of lime or salt should be spread over the ground at the proper seasons to destroy the embryos, the cysts of the fluke, and also the snail which acts as host.
6. Sheep must not be allowed to graze closely, for the more closely they graze the more fluke-germs will they pick up.
7. When sheep are allowed to graze on dangerous ground, they should have a daily allowance of salt and a little dry food.

If all farmers will unite in carrying out the above preventive measures, suggested by the knowledge of the life-history of the parasite, there is no reason why the fatal ravages of the destructive fluke should not be so restricted that the losses would at once be reduced to a comparatively trifling amount. There is at present one obstacle in the way of the total extermination of the fluke. So long as rabbits and hares have free liberty to convey the infection from one district to another, there will always be a danger of a fresh outbreak in places where the fluke had for the time been driven out. And for rabbits in a state of nature we cannot adopt preventive measures in the same way that we can for domesticated animals, so that on wet waste lands the breed

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of flukes may be constantly kept up. Very much, however, may be effected by united action ; and if the preventive measures which are now suggested are strictly carried out by all, we shall hear no more of disastrous outbreaks of the Sheep-rot, and something at least will have been effected towards raising the fortunes of British agriculture.

In concluding, I desire once more to express my thanks to all the gentlemen who have so readily and courteously assisted my investigations upon their fields. It gives me much pleasure to take this opportunity of thanking Dr. Acland for kindly permitting me to use the Sanitary Laboratory of the Oxford Museum for my experiments, and Professor Moseley for kindly placing all appartus in the Anatomical Department at my disposal.

To my friend Mr. W. Hatchett-Jackson, Natural Science Lecturer of St. John's College, Oxford, I am especially indebted, for he has most kindly come to my aid when prevented by my departure for New Zealand from revising the present paper, and has, by undertaking the revision of the proofs of both figures and text, and by making for me some additional drawings, rendered its earlier publication possible.

THE INSPECTION OF LIVE CATTLE AND DEAD MEAT.

BY INSPECTING VETERINARY SURGEON W. B. WALTERS, F.R.C.V.S., A.V.D., ALDERSHOT.

(*Continued from page* 270.)

Amongst the impositions occasionally practised on the unwary is that of substituting the flesh of one species or sex for that of another. I do not for a moment wish to infer that any government contractor would attempt to pass horse flesh for ox beef ; although amongst the poorer classes this fraud is by no means of unfrequent occurrence, and as a meat inspector ought to be at all times on the alert to detect impositions, a few minutes may be profitably devoted to the consideration of this subject.

It requires only a very elementary knowledge of comparative anatomy to distinguish between the carcase of the horse and that of the ox, even when carefully dressed and all offal removed.

In the first place, the ribs of the horse are eighteen, and sometimes nineteen on each side, whilst those of the ox are only thirteen in number, and are different in shape, being broader and flatter. The long bones of the ox are also relatively much shorter than those of the horse, and their ends or projections are less developed.

There are many other anatomical differences which might be enumerated, but the above will be quite sufficient for all practical purposes as far as the carcase is concerned.

In our examination of the meat, we shall find that the flesh of the horse is darker in colour than that of the ox, and its fibres are looser in texture. It is always of a peculiar reddish-brown colour, becoming darker on exposure to the air, and does not present that marbled appearance of good ox beef, owing to the absence of veins of fat in the muscular tissue. The fat of the horse is less abundant than that of the ox, and is always very soft, yellow in colour, and possesses a very disagreeable flavour.

The tissues generally have an oily appearance from transudation of the semi-fluid fat.

The "grain" of the meat varies so much with the breed, sex, and condition of the animal, that its coarseness or fineness cannot be relied on as a characteristic distinctive feature.

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The peculiar odour of horseflesh will, however, always be present. It is entirely different from that of beef, and reminds one of the smell of the stable.

As an article of diet, the flesh of the horse possesses considerable nutritive qualities, and is wholesome food. It is used in large quantities on the Continent, notably in Paris, but popular prejudice and other causes will always prevent it becoming a common article of diet in this country, even amongs tthe poorer classes.

In order to distinguish bull from ox beef, the following characteristic features must be chiefly relied on. The carcase of the bull will be recognised by the shortness and bulky appearance of the neck as compared with that of the ox; by the general roundness of the fore and hind quarters, by the comparative narrowness and shortness of the pelvis, by extra muscular development and size of bone, and by the excess of lean meat and deficiency of fat, especially in the neighbourhood of the sexual organs. If these organs were left intact in the dressing their appearance would at once denote the character of the animal, but it is a common practice where the intention is to pass bull beef off for ox to stuff with fat and skewer up the scrotum or purse, so as to make it resemble that of the ox. Under ordinary circumstances the scrotum of the bull is loose and pendulous, with the incision made on removing the testicle quite apparent; while in the ox, the purse is small, round, and imperforate.

The traces of the penis are always much more marked in the bull than in the ox, especially at the root, where, in the former animal, a large patch of close-grained muscular tissue, about four inches long by two and a half wide, will be found, while in the latter we shall find it reduced to a narrow strip of less than an inch in width.

The flesh of the bull is much coarser in grain, harder, drier, of a deeper red colour than that of either ox or heifer. It is also less marbled, and has a stronger odour.†

From this description, I need scarcely remark that bull beef is tougher and less nutritious than that of the ox, and except in cases of emergency should be rejected.

The term "stag" is, as I have before remarked, applied by the trade to an ox that has been castrated when full grown. Such an animal presents very much the appearance of the bull, and the meat is little better than bull beef, and should be rejected.

Cow beef may be distinguished from that of the ox in the carcase by the excavation made by the butcher in removing the udder, as well as by the absence of all traces of the male organs of generation. The bones of the cow are finer, neck lighter, the pelvis much wider, and the pubic bones less firmly united than in the ox.

The meat of the cow may also easily be detected as differing from that of either ox or heifer by the following peculiarities:—In old cows the flesh decreases in quantity, is much lighter in colour, and does not present the moist, juicy, and bright character of either ox or heifer beef, although it may be finer and softer in the fibre.

The fat has also a dull, yellow colour, and that surrounding the kidneys will be found to be interspersed with veins, increasing in proportion to the age of the animal.

Occasionally attempts are made to pass off the carcases of cows for heifers by removing the udder, and skewering up the skin so as to make it resemble that of the latter animal. This fraud can be detected by removing the skewers.

The udder of the heifer merely looks like a lump of fat with dots where the nipples have been, while in that of the cow the holes will be plainly seen, showing where the milk has passed through.

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As regards sheep, the remarks with reference to the difference between the carcases of bulls and oxen will apply to that of rams and wethers, besides which as the animal advances in years the fat of the ram becomes of a muddy-white appearance, and even in young animals it is less firm and clear than in the wether.

In cases where the carcase of an old ewe is attempted to be passed, we shall find that the flesh will have a light, dry appearance, due to loss of quantity and deterioration of quality. There will also be a venous appearance about the fat surrounding the kidneys and along the back, and an absence of that blooming redness of the bark on the sides which is distinctive of good mutton. A peculiar drab colour of this bark is characteristic of old sheep.

The following instructions for testing the age of cattle when slaughtered and dressed, are laid down in the "Commissariat Manual":—

"In an ox over eight years old, the bones of the back where chopped through will be of a light colour, whilst those of a young animal will be red and porous. In aged animals the long bones of the fore-quarters will have lost the gristle at their points: it will become changed at about eight years. The brisket bones will be hard, and there will be an absence of gristle between them.

"A simple method of finding out the age of the animal is by piercing the point of a penknife into the brisket bones and gristle at the points of long bones. If the animal is under eight years the knife will be inserted easily."

In cutting up the carcase for issue, it is essential that a fair division of the best and inferior parts of the meat should be made, and the course generally adopted in the commissariat butcheries appears to be an excellent one. With respect to beef which is issued in bodies and sides, the following plan is laid down:—

"When a whole side is not wanted, fore and hind quarters alternately are given. When less than a quarter is required, the fore quarter is cut in half across the ribs into neck half and breast half, which are issued alternately, the shin being cut off and given with the neck half.

"The hind quarter is also cut across, and with the rump and loin is given half the hock, divided lengthwise. When less than half the quarter is required the beef is cut up into joints, which are given alternately, either mouse, round, or buttock, rump or sirloin, neck-half or breast-half. A portion of the coarse meat of the neck is issued with either ribs, sirloin, cheek, flank, or buttock."

"Mutton is issued in carcase, sides, or quarters, which are alternated in the same way. When cut up into joints, a piece of the breast or neck is given with either leg, loin, or shoulders."

"When meat is received from contractors an equal number of fore and hind quarters of beef should be delivered, and mutton in whole carcases without heads. In countries where goats are plentiful, it should be insisted on that the foot of the sheep should be left on for identification, and only cut off when weighing has to be done."

In large stations, where regiments are supplied directly by the Commissariat Department, and where the above-mentioned system is adopted, a fair division of the carcase is ensured; but in other cases where the meat is issued to corps by contractors, and where the inspection is conducted solely by the regimental authorities, it is important that the greatest care should be exercised by those officers on whom this duty devolves in order to ensure the issue of a proper proportion of the best joints.

I shall conclude this subject by quoting the following remarks on the inspection of salt meat from Parke's "Practical Hygiene":—

"It is not at all easy to judge of salt meat, and the test of cooking must often be employed. The following points should be attended to:—

"(*a*) The salting has been well done, but the parts inferior.—This is at once detected by taking out a good number of pieces; those at the bottom of the cask should be looked at, as well as those at the top.

"(*b*) The salting well done, and the parts good, but the meat old.—Here the extreme hardness and toughness and shrivelling of the meat must guide us. It would be desirable to have the year of salting placed on the cask of salt beef or pork.

"(*c*) The salting well done, but the meat bad.—If the meat has partially putrefied, no salting will entirely remove its softness; and even there may be putrefactive odour, or greenish colour. A slight amount of decomposition is arrested by the salt, and is probably indetectable. Cysticerci are not killed by salting, and can be detected. Measly pigs are said to salt badly, but Mr. Gamgee informs me this is not the case.

"(*d*) The salting badly done, either from haste or bad brine.—In both cases signs of putrefaction can be detected; the meat is paler than it should be, often slightly greenish in colour, and with a peculiar odour.

"It should be remembered that brine is sometimes poisonous; this occurs in cases where the brine has been used several times; a large quantity of animal substance passes into it, and appears to decompose. The special poisonous agent has not been isolated."

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL HELD OCTOBER 17th, 1883.

G. FLEMING, Esq., LL.D., President, in the Chair.

Members present:—Sir Frederick Fitzwygram, Professor Pritchard, Messrs. B. Cartledge, J. R. Cox, J. Harpley, W. B. Walters, H. L. Simpson, F. W. Wragg, E. C. Dray, W. Whittle, A. H. Santy, W. Woods, H. J. Cartwright, R. Reynolds, T. Greaves, P. Taylor, F. Blakeway, and the Secretary.

The notice was read convening the meeting.

The minutes of the previous meeting were taken as read and confirmed.

Telegrams and letters were read from Professors Robertson, Simonds, and Walley, and Messrs. Perrins and Batt, regretting their inability to attend the meeting.

Presentations to the library were announced from Professor Robertson, Dr. Nosotti, and Dr. Harms, and the thanks of the Council were accorded to the donors.

Correspondence.

A letter was read from Professor Walley, submitting questions with regard to the matriculation scheme.

The PRESIDENT said that questions with regard to the matriculation examination had better be left to the College of Preceptors to decide, and he would submit the questions to them. To this the Council consented.

A letter was read from Mr. Charles Hunting, of South Hetton, offering to give £50 to the College Fund and Field Bequest if nineteen other members would give an equal sum; or, if this could not be done, he would be glad to give £100 if nine others would cover it with equal amounts.

A letter was read from Mr. Kingsett, of Oswestry, asking whether anyone possessing the diploma of the Ontario Veterinary College could practise as a veterinary surgeon in England.

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A letter was read from Mr. Bretherton, applying for registration as a foreign practitioner, and enclosing various diplomas and credentials from America.

On the motion of Mr. REYNOLDS, seconded by Mr. TAYLOR, these communications were referred to the Registration Committee.

A letter was read from the Secretary of the Central Veterinary Medical Society, thanking the Council for the use of the Board Room, and asking for a continuance of the favour.

The Council acceded to the request, as heretofore.

A letter was read from Mr. Finlay Dun as to examinations.

Mr. TAYLOR proposed that the letter be laid on the table as read.

Mr. BLAKEWAY seconded the proposal, which was agreed to.

A letter from Mr. Stephen Cook, calling attention to the chemistry examinations, was also ordered to be laid on the table.

Mr. J. H. B. Hallen having applied for registration as a holder of the Highland and Agricultural Society's certificate, and having been certified by Professor WALLEY, it was resolved that he be registered as a member of the Royal College of Veterinary Surgeons.

Examinations.

The report of the Court of Examiners was read.

Registration Committee.

The report of this Committee having been read, it was resolved that the cases of James Yates and G. H. Pickburn, on which additional evidence has been received, be referred back to the Registration Committee.

It was also resolved, on the motion of Mr. WHITTLE, seconded by Mr. TAYLOR, that Messrs. Doris, Drew, and Barrowcliffe, in accordance with the recommendation of the Registration Committee and the Privy Council, be registered as existing practitioners.

Finance.

The report of the Finance Committee was received and adopted, and the Treasurer was authorised to draw the necessary cheques.

Mr. GREAVES brought forward the following motion, of which he had given notice :—"That if a student passes in any of the oral subjects with 'Good' or 'Very good' at any of the Examinations, he shall not be again examined in the subject he has thus passed ; but, if rejected at his practical, his further examination shall not be proceeded with, and he shall be required, when he presents himself again for examination, to furnish the examiners with a certificate from a veterinary surgeon showing that he has devoted the interim in obtaining the knowledge he lacked." He said his motive was to render the method of examination of the veterinary student more efficient, and, as a result, to raise the standard of the profession. The subject had been brought before the Council recently by Professor Walley, and after considerable discussion it was lost by one vote. He had incorporated in his motion the suggestions made by Mr. Cartledge, Mr. Cox, and Sir Frederick Fitzwygram, and he believed that some such method was absolutely necessary in order to make the profession what it really should be. It was the province of the Council to keep a strict supervision over the interests of the profession. They all knew it as a fact that numbers of students passed every year, but who, when they went into practice, proved themselves wholly incompetent. No one regretted this more than he did. They could never hope to make all students equally clever, but the object

of the motion was to give them a greater degree of proficiency, and at the same time to give the examiners a better chance of assuring themselves of the possession by the students, or of enforcing upon them, of those sanitary and beneficial principles which they did not possess at the present time. A few years since the Council adopted the plan of the examiners examining the student two or three times, instead of giving him one examination only. This was thought at the time to be a step in the right direction, and he believed it had worked most satisfactorily. All students alike were not endowed with great mental capacities. He thought that the great mass of intricate, scientific, and profound matter which such students had to master had the tendency to overcrowd and overload their brains, and so to make their studies irksome and distasteful. He thought that while they were neither doing an injustice to the student who had the advantages of a good memory and good ability, nor lessening in the slightest degree the number or the profundity of any subjects which a student must learn, they would at the same time give a supreme relief to the ordinary student by teaching him certain specified subjects one session and examining him upon them, and then the next session other specified subjects and examining him upon them, and so on to the third session, providing that at each or either of those examinations the subject which he has passed with "Good" or "Very good" should be considered satisfactory, and that he should not be called upon again to be examined upon those subjects. The advantage of this must be obvious to every thinking man. The whole attention of the student could be concentrated upon these special subjects. He could learn them more thoroughly. He was then examined, and if he got "Good" or "Very good" he was at once relieved of them, and his mind being free, he could concentrate all his energies on the study of the other special subjects the next session. He would leave the matter to the wisdom of the Council, simply observing that they could want no more than to find that a student was fully proficient in the subjects upon which he was examined. As to the practical examination, if the student was found fully efficient, they neither asked nor desired to know when or how he had acquired his knowledge; but, on the other hand, if the Examiners were clearly of opinion that he was deficient in practical knowledge, he would propose that his further examination should not be proceeded with. In the first place, it was understood that he could not pass for his diploma if he failed in his practical, and therefore it would be useless for him to go through the oral examination. In the second place, it would be incurring an unnecessary expense to allow him to be further examined when already rejected. It might be said that the rules of the Council would have to be altered if the motion was carried; but he believed that it was of so much importance that that point should not be taken into consideration.

Mr. WHITTLE seconded the motion.

Mr. BLAKEWAY said he was in hopes that this matter was already settled. It was really bringing forward again the motion of Professor Walley, which was negatived at a previous meeting. He regretted that it had been brought forward, inasmuch as the schools would begin to think they were always interfering with the examinations. As to the suggestion that if a student failed in his practical examinations he should not be further examined, he (Mr. Blakeway) doubted whether they would be legally justified in adopting that course. The student, having paid his fee, was entitled to all the examinations that he went up for.

Mr. WOODS said the motion of Mr. Greaves was opposed to the real welfare of the profession, and that a student should be allowed to enter into the profession, having satisfied the examiners upon prescribed subjects one by one, was, to his mind, an innovation of the greatest magnitude, and

fraught with the gravest consequences. If the profession was to progress, they must make the examinations more difficult, and if a student had not the capacity to learn the three subjects necessary to pass his first examination all at once, it was better for the general welfare of the profession, and most likely for his own, that he never entered it. On the other hand, if a student having passed in any one subject with "Good" or "Very good" at one examination was likely to fail in the same subjects a few months afterwards, it showed that he had either very small mental capacity, or that his passage was a matter of good luck; in either of which cases he had better undergo another examination. He moved as an amendment: "That in the final examination the oral precede the practical, and that students failing in the oral be not allowed to pass on to the practical, but that a student satisfying his examiners in the oral, but being rejected in the practical, need not again present himself for the oral, but before presenting himself again for the practical he shall give the examiners some satisfactory proof of having passed the interval with a veterinary surgeon." That was something like the motion he proposed twelve or eighteen months ago.

The PRESIDENT said that could not be accepted as an amendment, because it altered a bye-law, and must be suspended for three months.

Mr. TAYLOR opposed Mr. Greaves's motion. He could not see why they should always be called upon to alter the bye-laws, thereby giving necessary trouble to the Council and unnecessary excitement to the examiners.

Mr. HARPLEY also opposed the motion. He said they had lately made some alterations which had been adopted by the teaching schools, and he knew that the schools were very desirous that the Council should now let them alone for a short time. These small changes in the present examinations would work very badly, and no one would be satisfied, not even the students themselves.

The motion and the amendment were then withdrawn.

The PRESIDENT said he quite agreed as to the desirability of adhering for a short time longer, at any rate, to their present examinations. The first part of the motion Mr. Greaves had brought forward was very objectionable, because it allowed men of small brain capacity to pass their examinations. He thought the subjects had been so allotted in the existing scheme that a man of fair education and ordinary capacity was able to pass in them, and any retrograde step was undesirable. He gave Mr. Greaves every credit for the good intention of improving the education of the profession, but he certainly thought that the motion which he had brought forward would be a retrograde movement. With regard to stopping the examination of a candidate at any part of his examination, he did not think the examiners would undertake that grave responsibility. A candidate had to be rejected by the whole Board, and therefore if he was rejected in the early part of his examination the other members of the Board were not able to give an opinion as to his fitness or unfitness, and such a plan would not work; it would be very unfair to the candidate, and could not be legally carried out.

The Supplemental Charter.

The PRESIDENT said it was his pleasure to report that the Supplemental Charter had been granted to the College. Certain privileges were sought by this charter which were necessary to the full working of the Royal College. One was for power to enforce a period of pupilage, another was to increase the examination fees, another to regulate the age of candidates entering the profession, and others related to the election of the Council, of the President, and of the Registrar. The question of pupilage being opposed by the Corporations of the City of Edinburgh, of Glasgow, and of the Highland and

Agricultural Society, had been refused by the Privy Council, but an increase of three guineas in the examination fees had been sanctioned, as well as the other powers asked for. He believed that if the Council could now frame the bye-laws in accordance with the charters they had obtained, there was nothing more to be desired in this direction.

The Field Bequest and Royal College Building Fund.

The SECRETARY reported that the amount at present received in response to the recent appeal to the profession was only £294 3s.

The investigation of the plans and particulars of the proposed site in Brunswick Square for the College Buildings was left to the House Committee to decide upon, with instructions to report the steps they had taken upon the same to the next meeting of Council.

Mr. BLAKEWAY said, at the last meeting of the Midland Counties Association the matter of the Building Fund of the College was brought before them, and he was authorised as treasurer to hand a cheque to the President for fifty guineas, and to say also that should other societies come forward in a like liberal spirit, and funds were still lacking, they might be tempted to do a little more. If it had not been for the strong opposition of a member of that Council the cheque would have been for one hundred guineas, instead of fifty. He was rather surprised at the opposition, coming as it did from a gentleman who was only an honorary member of the Association, and who had not contributed one farthing to its funds.

Mr. GREAVES said he believed Mr. Blakeway had authority to say that if the Council required the sum before the time expired the Midland Counties would give another fifty guineas.

The PRESIDENT said, there was a matter which he had been asked to bring before the Council, and he had written to Prof. Brown requesting him to be present that he might assist in explaining to the profession the action of the Privy Council, with regard to an order it had recently issued having reference to existing practitioners. Since the time of the Cattle Plague the Privy Council had only sanctioned certain qualified members of the profession to act as inspectors under a local authority. Quite recently it had removed that restriction, and now the local authorities could employ any existing practitioner who was entered in the register. He was quite unable to understand this action. The effect of registration did not make one of these men any more qualified than he was before. He had undergone no examination, he had been submitted to no test as to his fitness to practise, he had only been allowed to register himself in order to escape the penal clause of the Act of Parliament. He was quite unable to understand why these men who, before the passing of the Act of Parliament, were not deemed to be competent to act as inspectors, were now, after the passing of the Act, deemed to be competent, and for that reason he had asked Prof. Brown to be present to endeavour to explain to the profession the action of the Privy Council with regard to these men. Prof. Brown not being present, the question must be deferred until the next Council meeting.

A memorial from Scotland, having reference to the election of members of Council, was referred to the Parliamentary Committee.

The Belgian International Veterinary Congress.

The PRESIDENT reported that he had, in accordance with the wishes of the Council, attended the International Veterinary Congress at Brussels. There were over 300 delegates and representatives present, and the subjects discussed were of great international importance, especially with reference to dealing with epizöotic diseases. There was also a question raised with regard to veterinary education, and the unanimous feeling was that all

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veterinary schools should be under Government inspection and maintenance. The general questions discussed and the results were alluded to. The next Congress was to be held in France within five years.

The obituary notice was read.

The following gentlemen were elected as honorary Foreign Associates: Professors Bagge, Locustaneo, and Berdez, and Messieurs Siegen and Hardy, the Secretary being empowered to issue the usual Honorary Fellowship Diploma.

A vote of thanks to the President brought the proceedings to a close.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Blackfriars Hotel, Manchester, on Wednesday, September 12th. The President, Mr. William Woods, occupied the chair; there were also present Messrs. Thomas Greaves, Peter Taylor, William Dacre, William Whittle, George Morgan, M. G. Roberts, A. Lawson, S. Locke, W. A. Taylor, Thomas Briggs, E. Kitchen, J. W. Ingram, A. M. Michaelis, J. Hart, J. Litt, W. Davidson, and J. B. Wolstenholme; also visitors—Messrs. C. Phillips, J. Carter, A. New, and four other gentlemen.

The minutes of the last meeting were read and confirmed; and letters of excuse were received from Messrs. John Lawson, Henry Thompson, Prof. Williams, E. Faulkner, and Richard Reynolds.

The correspondence which had taken place between Mr. Rolls and the Secretary was put before the President.

Mr. S. LOCKE then moved, "That the sum of fifty guineas be subscribed out of the funds of this Association towards raising £1,000 for the Building Fund of a new Royal College of Veterinary Surgeons, so as to complete the conditions under which the late Mr. Field has bequeathed 1,000 to the same object." This resolution was seconded by Mr. W. A. Taylor, and was carried unanimously.

Mr. W. A. TAYLOR then related a case of Fracture of the Styloid process of the occiput of a horse, complicated by the formation of an abscess, which resulted in a fistula opening on the angle of the jaw. This had resisted previous unskilful treatment at other hands for months, but when Mr. Peter Taylor and he opened up and explored the same, the process of bone was found to be only very slightly attached at its base; they removed it with bone forceps, and the wound healed in a few days afterwards.

Mr. J. HART exhibited a pointer puppy with a curious affection of one eye.

Mr. WILLIAM DACRE then read an able paper on "The Etiology of Glanders," and contended that the disease was specific in its character, and could only be produced by introduction of its special poison.

Messrs. P. Taylor, T. Greaves, J. Carter, S. Locke, W. A. Taylor, C. Phillips, A. Lawson, and J. B. Wolstenholme joined in the discussion, some holding with the essayist, whilst others argued that the malady had also a spontaneous origin when horses were placed under bad hygienic conditions.

Mr. DACRE having replied, the discussion was adjourned until next meeting, when Mr. Greaves undertook to re-introduce the subject, on a broader basis.

Mr. ALEXANDER LAWSON proposed that "a vote of thanks be given to Messrs. W. Dacre, W. A. Taylor, and J. Hart, for the valuable paper and cases they had brought before our notice." This was seconded by Mr. PETER TAYLOR and carried unanimously.

J. B. WOLSTENHOLME, *Hon. Sec.*

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

AN ordinary meeting of this Association was held at the Crown Hotel, Leamington, on the 20th of September. The chair was taken by the President, Mr. William Carless (Stafford), and the vice-chair by Captain Russell (Grantham). Among other members present were: Messrs Lawrence C. Tipper (Balsall Heath), Hon. Secretary; Osborne Hills, Leamington; Henry M. Stanley, Birmingham; J. M. Parker, Birmingham; Harvey Collett, West Bromwich; Edward Meek, Walsall; William Dale, Coventry; A. B. Procter, Solihull; John S. Barber and Alfred Over, Rugby; Thomas Greaves, Manchester; Edward Stanley, Warwick; and F. Blakeway, Stourbridge, Hon. Treasurer. The following visitors also attended: Messrs. Anderson, Warwick; B. Meek, Birmingham; Walter Burt, A.V.D., Coventry; E. G. Stanley, Warwick; John Manley, M.R.C.S.E.; Barter White, proprietor *Leamington News*; —. Dudley, W. Thidlen, etc.

The Secretary read letters and telegrams of apology from F. W. Wragg, H. R. Perrins, P. Taylor, W. Sanders, H. J. Cartwright, R. H. Cartwright, H. D. Pritchard, James C. Barling, Alfred Hodgkins, R. C. Trigger, and G. Carless.

The HON. SECRETARY reported that, according to instructions, he had written to Mr. Morgan, the secretary of the National Veterinary Benevolent and Defence Association, advising him of the election of Mr. Blakeway as Life Governor of that association, but had received no reply.

Mr. BLAKEWAY intimated that he had not heard from Mr. Morgan.

The meeting requested Mr. Tipper to address another letter to Mr. Morgan on the subject.

Mr. BLAKEWAY called attention to the failure of the Association to secure a representative on the Council at the last May meeting, and attributed the non-success to the want of joint action with other provincial associations. The nominee of this Association, Mr. Olver, who was eminently worthy of the honour proposed to be conferred upon him, only received 160 votes, while the highest on the poll scored 679. Unless the provincial associations went hand-in-hand, the Londoners would always carry their men. When Mr. Perrins was elected by 419 votes he stood fifth on the list, 738 votes having been given for the highest candidate.

Mr. GREAVES concurred in Mr. Blakeway's observations, and regretted that last year was not the first occasion on which the cold shoulder had been given by this society to others in the provinces.

The HON. SECRETARY reminded members that at the meeting at which Mr. Olver was nominated, he received no instructions as to applying to other provincial associations, although he particularly asked for instructions. He, however, did communicate with some of them on the subject, but received no reply; consequently there was no amalgamation. It would be better to pass some definite resolution as to their course of action.

Mr. BLAKEWAY gave notice of his intention to move at the next meeting a resolution in favour of co-operation with other associations.

Mr. MEEK considered that they placed the Secretary in an awkard position; they should instruct him with what Associations to co-operate.

The PRESIDENT exonerated the Secretary from any blame in the matter.

The TREASURER submitted his report, which was adopted.

The SECRETARY read a voluminous correspondence from Mr. A. G. Rolls, M.R.C.V.S., Arundel, Sussex, and others, relative to an Order in Council bearing date May 10th, 1883, by which Article 121 of the Animals Order is revoked, and in addition to Members of the Royal College of Veterinary Surgeons and holders of the Certificate of the Highland and Agricultural

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Society, it is considered a sufficient qualification for the post of Veterinary Inspector, that the holder is registered as an Existing Practitioner under Section 15 of the Veterinary Surgeons Act, 1881.

The correspondence commenced with a letter dated May 24th, from Mr Rolls, in which he wrote strongly of the action of the Privy Council, and in one letter he suggested that the veterinary inspectors should resign *en masse* unless the order was withdrawn.

In one letter, dated June 5th, addressed to Mr. Rolls, Mr. Tipper wrote, "I have been communicating with our President and the secretaries of three other associations, as to your letters. Our President thinks we cannot, as an association, take action, unless our members are first consulted."

Mr. Wolstenholme, hon. secretary of the Lancashire Veterinary Medical Association, will take no action until next meeting of his association.

Mr. Broughton, hon. secretary of the Yorkshire Veterinary Medical Association, considers the action of the Privy Council an indignity on the profession, but sees no other course than waiting for a meeting of his association, the middle of July, when the question will be brought forward.

Mr. Moore, secretary of the Liverpool Association, has not replied.

Dr. Fleming wrote Mr. Tipper on September 8th, from Brussels: "I am here attending the International Veterinary Congress. I intend to bring the subject before the Council of the R.C.V.S. next meeting, and will request Prof. Brown to be present to explain the action of the Privy Council. Until we hear the reasons, of course action would not be advisable. You may depend upon my doing all I can to get justice done. The Council meeting will be held towards the end of next month."

The last letter, dated 13th September, was from Professor Duguid, who wrote in the absence of Professor Brown, that he considered the new order was the natural result of the Veterinary Surgeons Act, by which these existing practitioners were, by Act of Parliament, recognised as qualified to practise.

Captain RUSSELL mentioned that the Lincolnshire Association had instructed their secretary to communicate with other secretaries on the subject.

Mr. TIPPER said he had not received any communication.

Mr. GREAVES considered it useless to attempt to induce the Privy Council to alter the order. The meeting should be glad to have been delivered from the time when policemen and butchers were allowed to act as veterinary inspectors. The Liverpool and Manchester Association had taken no notice of the order. It was the opinion of Professor Axe and others that the registered practitioners should be allowed to attend meetings of country veterinary medical associations, and also to join as members. (Expressions of disapprobation.) At the Leeds meeting he intended to move a proposition declaring registered practitioners ineligible for membership. (Loud applause.)

The PRESIDENT remarked that although agitation was a good thing for securing redress of grievances, but little could be gained from it in the present instance. The Privy Council endorsed the action of local authorities, consisting of magistrates who gave the preference to members of the Royal College of Veterinary Surgeons.

The subject then dropped.

Mr BLAKEWAY, according to notice, proposed: "That the Association vote a sum of fifty guineas to the building fund of the Royal College of Veterinary Surgeons." He pointed out the desirability of the College possessing suitable premises, and made special mention of Mr. Field's bequest of £1,000 towards the building fund if another £1,000 could be raised during the current year. The Midland Counties Veterinary Medical Association had in June last a balance in hand of £140 19s. 8d., and it could therefore afford

the contemplated grant, which would be a fitting recognition of the liberality of Mr. Field, who had been most anxious to improve and elevate the profession to which they belonged.

Mr. H. STANLEY enquired what was the amount of the building fund before Mr. Field's bequest was known.

Mr. BLAKEWAY: The funds are somewhat considerable. I believe that the sum of £2,000 is in the bank.

Mr. H. STANLEY regarded the proposal as being rather large, and recommended the meeting to ascertain what other associations were doing.

Mr. GREAVES seconded Mr. Blakeway's proposition, and mentioned that when the Lancashire Association proposed to subscribe £25, he objected that the sum was unworthy of that old and influential society, and the members unanimously increased the gift to £50. There were between two and three thousand pounds in hand in behalf of the building fund. He had recommended that every member of the veterinary profession should be requested to subscribe, and he, Mr. Fleming, and others headed the list with sums ranging from £20 to £25. It was hoped that no difficulty would be experienced in obtaining the sum needed before the end of the year in order to secure Mr. Field's bequest.

Mr. PARKER, considering that Mr. Blakeway's proposition did not go far enough, moved, as an amendment, that the vote be increased to a hundred guineas, in the hope that other associations would be stimulated to follow their example.

Mr. OSBORNE HILLS seconded Mr. Parker's amendment, and warmly commended the building fund to the liberal support of the veterinary profession.

Mr. H. STANLEY reminded members of the difficulty experienced a few years ago in keeping the association together, and cautioned them against impoverishing the funds. Fifty guineas formed a donation worthy of the Midland Association. It would be well to wait and see what other associations did before exceeding fifty guineas.

Captain RUSSELL considered fifty guineas sufficient, and recommended that if the Association could spare the money, the meeting should vote £10 each to the poor widows of whom they had lately been reading in their journals.

Mr. BLAKEWAY withdrew his proposition in favour of Mr. Parker's amendment.

Mr. GREAVES mentioned that the Lancashire Association voted all the money in hand, £38, and the members added £12 to make it an even £50.

The PRESIDENT considered that £50 represented all that could at present be expected from the Association. If the £1000 required to meet Mr. Field's condition was not likely to be raised this year, the Association might re-consider the matter. (Applause.)

The meeting adopted an amendment by Mr. Stanley, voting fifty guineas to the building fund, and stipulating that if further help is needed the subject shall again be submitted for consideration.

Mr. E. STANLEY, F.R.C.V.S., then read the following paper on

VETERINARY MEDICAL ETHICS.

Mr. President and Gentlemen,—In introducing the subject of Veterinary Medical Ethics I beg you will understand that I do so with a view of promoting a better feeling amongst ourselves as a body in our professional intercourse, and as we individually aim at a higher standard of honourable courtesy one to another, so shall we gain the moral support of our clients. They treat us as though ethics were unknown to us, although there is an unwritten code of honourable dealing. I cannot help thinking that if we could agree to define it, even by only a limited code of rules, we should be

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laying the foundation of the advancement of our professional standing, to the benefit of our clients and of our patients, as there cannot be a doubt that we and the public often err from ignorance in our treatment of each other. As a guide, I have taken Dr. Styrap's "Code of Medical Ethics," and propose to abstract freely from his excellent and accepted work, and modify the wording to make it applicable to our body.

Our profession is an honourable and noble one. We have to fight against disease and relieve suffering in creatures absolutely necessary to the welfare of mankind. Although our patients cannot speak vocally, yet their dumb language is as an open book before us; we are constantly studying its language, and I know nothing more interesting, more varied, or capable of giving more intense satisfaction than this study—the every-day habits of our different patients in health and disease, their *movements*. Nothing is more beautiful than to watch animal life in the enjoyment of health; and who does not feel the sense of sympathetic pain on beholding the distorted and painful movements of a suffering creature? The beautiful, glossy, clean appearance of the healthy skin is quickly lost on the invasion of disease.

The countenance of the horse (quoting from Whyte Melville) denotes courage, docility, good temper, reflection (for few faces are so thoughtful as that of the horse), gratitude, benevolence, and, above all, trust. Yes, the full brown eye, large and mild and loving, expresses neither spite, nor suspicion, nor revenge. It turns on you with the mute unquestioning confidence of real affection, and you may depend on it, under all pressure of circumstances, in the last extremity of danger or death.

The patient and trusting expression, full of life and energy, is changed by disease, showing languor, depression, indifference, and often intense agony. It is our noble duty to know and recognise these different states, and to assist nature in restoring and maintaining these poor creatures in the enjoyment of health.

We have another duty often devolving upon us—the question of life or death. It is a most painful subject, and one from which we all shrink, but we are bound, by the vastly higher knowledge we possess (by our special training) of the suffering of the brute creation, to do all in our power to shorten the period of suffering by humanely ordering the creature's destruction.

We should not forget that in a wild state a wounded animal, or one grievously ill, is often attacked by its fellows or by other beasts of prey, or it succumbs to an early death by exposure to climate or deprivation of food. Whereas our sick or incurably lame are by domestic management so treated that by prolonging life we prolong suffering, so that we should feel, *in the interest of the creature*, we are in taking its life doing our duty to the best of our judgment for that creature's good.

It is to my mind a source of pride and pleasure to feel that the knowledge of animal suffering has been mainly inculcated and extended by veterinary knowledge and the noble Society for the Prevention of Cruelty to Animals is a result, and one that will always receive our earnest support.

Our profession not only teaches us patient observation and kindly feeling for animal life, but the exercise of it makes us self-denying, persevering, and enduring. Exposure to the vicissitudes of our climate, anxiety for our patients, and the constant and very varied character of our climate, call forth all the talent in us, in order to do our duty to them, our patients, and ourselves.

Such a life should tend, and I maintain is tending, to ennoble us as a body. Our science is still so young that the memory of our fathers' practice, to bleed and physic, which, in accordance with their knowledge, is still fresh in our memories; but gradually we are groping from darkness into

light. No doubt their unremitting attention and persevering observation developed the mental faculties I have enumerated above. And by special training our minds are able to grasp more of this inexhaustible study, and it naturally tends to elevate our minds and form our characters, so that our relations one to another are becoming daily of more interest and importance; and we, feeling this, associate together for mutual improvement and advancement, and as we increase in knowledge so we also increase in numbers, crowding on each other for existence; hence arise, in the place of brotherly love, a spirit of rivalry or jealousy, which we should strive to control and resist as baneful to our general interests and derogatory to our manhood; and until we are true to ourselves we shall remain inferior to other professions. We call ourselves brethren; are we fraternal? Do we strive to elevate self at the expense of our neighbours by invidious remarks and unworthy artifices? Let us remember the great moral precept: "Whatsoever ye would that men should do unto you, even so do unto them," and so foster a more generous *esprit de corps*.

Let us act as Christian gentlemen, remembering our province is to heal, not to inflict injuries, while being mindful of our good name, on all occasions conscientiously uphold the reputation of our friends and competitors.

Such social meetings as we are now holding are eminently calculated to exert a beneficial and moral influence upon us by encouraging habits of intercourse and exchange of thought, enlarge our sympathies, and tend to our mutual support, and will teach the public to respect us as a body at unity with itself. "Our presence here to-day proves an innate desire for our social union and moral improvement; and I trust our efforts will be earnestly supported by other associations and the profession generally. Individually, let us each strive to live in harmony and good fellowship, rivalling each other only in good conduct and feeling. Be ever ready to lend a helping hand when needed, and defend a brother's character when attacked, so that we may live and die respected and honoured.

A veterinary surgeon, qualified by his special training, is entitled to be attentively and respectfully listened to and courteously treated, and his advice carefully carried out; he should have credit for sincerity of purpose, honest zeal generated by the learning and impartial observations accumulated from age to age, as contrasted with the low arts and crooked devices and purely selfish ends of the charlatan, whose unscrupulous announcements of marvellous cures by simple but secret means are misleading and false, and, so far, fraudulent.

If a practitioner has rights he also has duties; he cannot rightly refuse his professional services, except when such concession would be unjust and derogatory to himself or to a brother practitioner.

He should be ready and prompt in professional aid to rich or poor, without stipulating for undue personal advantage, which is dishonouring and deserving of severe censure.

It is a noble, unselfish task to promote health and obviate disease by the judicious application of hygienic science, and it is our duty to denounce quackery in all forms, which only exists on the ignorance of the credulous public, which we should make it our aim to enlighten.

We should be kind and forbearing with our patients; a quiet, gentle manner is of great aid in assisting diagnosis of disease, and cruel restraint should be avoided; confidence, distrust, and fear are readily communicated from man to animals. We should remember our experience is so exceedingly more extensive than theirs; hence knowledge gives us power.

In professional intercourse let our self-respect make us courteous and high-minded; above all things be truthful and candid, closing our ears

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to slander, cultivating social intercourse, and courteously but resolutely insist on our rights.

We must remember that no laws, however stringent, will make a man honourable who is not innately inclined to be so; but while admitting this general truth, we affirm that a *good* example is calculated to exert an almost equally powerful influence with that for evil, and, therefore, that the *morale* of the truly honourable members cannot fail to exercise a very important influence over those who might by nature be otherwise inclined; for however much the latter may affect to despise the good opinion of the local practitioners, yet knowing, as they well do, that on the formation of an ethical committee in each association unprofessional conduct will be brought under the cognizance of their brother members in their respective districts, and, if need be, of the profession at large.

(*To be continued.*)

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this association was held at the County Hotel, Newcastle-on-Tyne, on Friday, August 31st, the President, D. M'Gregor, Esq., Beddington, in the chair.

Present.—Messrs. Dudgeon (Sunderland), C. Hunting (South Hetton), Blench (Thornley), Farrow (Durham), Wheatley (South Shields), Nesbit (Fence Houses), Elphick, C. Stephenson, A. Hunter, Wm. Hunter Wilson, and the Secretary, Newcastle-on-Tyne. Present as visitors—Messrs. Hurrell (Southminster), Stevenson (Sunderland), and Stewart, Vet. Student. Letters were received from several members of the Association regretting their inability to attend.

The minutes of the previous meeting having been read and confirmed, the adjourned discussion on Pink-eye (which formed the subject of the President's address delivered at last meeting) was resumed by Mr. HUNTING, who said that it was no new disease, but had existed in this and other countries for centuries, and had at different times been described by various authors, notably by French and Italian veterinarians, and also in an edition of "White's Farriery," published by the late Mr. Charles Spooner fifty years ago, from which work Mr. Hunting read an extract most accurately describing the disease as seen in this city during the last two years. Personally, he remembered the disease as far back as the year 1836, at which time the symptoms were identical with those shown in the recent outbreak, but the mortality was much greater, the death-rate being in many places as high as 42 per cent. Mr. Hunting would not propose to ask the Legislature to place this disease under the workings of the Contagious Diseases (Animals) Act, as by doing so the loss to trade would be tenfold greater than by the disease; and, while fully admitting that it is capable of being transmitted from a diseased to a healthy animal, believed that it frequently arose spontaneously, and he cited several cases as bearing out this view; and he believed that the rapid spread of the disease and the severity of the symptoms were chiefly governed by atmospheric causes. He also thought the vulgar term "Pink-eye" was greatly misleading; it might do for Yankee clap-trap, but was derogatory for respectable veterinarians to use, being a meaningless term.

Mr. C. STEPHENSON was of opinion that the disease is highly contagious and infectious in its nature, and that it does not arise spontaneously; and believed that the recent outbreak was due to the importation of foreign ponies, and thought it advisable for the Legislature to interfere with a view of preventing its reintroduction, and also to provide for the inspection of horse-marts and dealers' stables; and he thought by a proper system of inspection that the disease would be greatly limited. Our duty as veterinary

surgeons is to find out the origin of and the laws which govern all infectious diseases, so that we may be prepared to meet and deal with future outbreaks in a proper manner.

Mr. DUDGEON was of opinion that it does not arise spontaneously. He remembered the outbreak of 1865, when the symptoms were similar to those of the recent outbreak, but not in so virulent a form, and he thought that (however desirable it might be to impose restrictions) the time had hardly arrived to ask the Legislature to interfere.

Mr. ELPHICK did not believe in the sporadic origin of the disease, and cited several instances that had come under his notice of outbreaks of the disease following on the track of the movements of the afore-mentioned foreign ponies. He also narrated the cases of two stallions in this neighbourhood which had suffered from the disease in the winter, and to all appearances recovered. In the spring, however, nearly all mares served by these stallions contracted the disease, although at the time there was no external evidence to show that the horses were themselves affected, and he thought it extremely desirable that we should endeavour to discover how long an animal was capable of propagating the disease after it had apparently recovered.

Mr. HURRELL stated that a peculiarity of the disease in Essex was that it rendered the animals attacked subject to periodic Ophthalmia, which invariably ended in the animal becoming blind.

Mr. DUDGEON drew the attention of the meeting to the recent prosecutions for docking horses, and said he would like to take the opinion of the members present as to whether it was desirable to perform the operation. His own opinion was that there were cases in which it was necessary, and he trusted that the recent convictions would not lead to the prosecution of veterinary surgeons who performed the operation in cases where it was for the comfort of the animals or the safety of persons in charge of them.

Most of the members present spoke on the subject, and were unanimously of opinion that in most cases docking was unnecessary, but that there were cases where it was advisable, and expressed their determination of using their own discretion as to whether to perform the operation or not.

Mr. STEPHENSON said he did not believe in the indiscriminate docking of horses, but believed it to be necessary occasionally, and mentioned that he had recently seen a cab-horse whose tail was sore and bleeding from constant friction with the dash-board of the cab, and he thought this was one of the cases where docking was necessary both for the comfort of the horse and the safety of the persons riding in the vehicle. He believed that docking skilfully performed was not a very painful operation, and proposed the following resolution, which was seconded by Mr. Hunter, and unanimously carried, viz. :—"That we, the members of the North of England Veterinary Medical Association, are of opinion that indiscriminate docking of horses is unnecessary and cruel, but that there are cases in which veterinary surgeons are perfectly justified in performing the operation."

The PRESIDENT then narrated the following interesting case of

Inversion of the Bladder.

The subject was a mare, six years old, which had foaled a few days previous to my being called in on June 24th; was said to have great difficulty in micturating. On examining "per vaginam," I found what I supposed to be a tumour about the size of a goose's egg, hard, and apparently firmly attached to the floor of the vagina, posterior to the meatus urinarius. The mare had much and frequent straining, the urine passed in small quantities after each exertion and had a milky appearance, but between the straining trickled from her involuntarily, scalding the thighs and legs in its course.

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I gave a diuretic, and ordered nursing and caretaking, in not allowing her to be exposed to rain or cold. The general health and appetite was good, and the foal seemed thriving. I did not see her again until the 27th, when the supposed tumour was much longer, larger, softer to the feel, becoming pedunculated, and so far projecting towards the vulva that it could be plainly seen.

After careful manipulation I came to the conclusion that it was inverted bladder, but as I had never read or heard of such a case (not having seen the article in the March number of the VETERINARY JOURNAL—in fact, it was only two days ago that I came across it), I thought it better to have some further advice. On the 28th I took Mr. Hunting to see the case, and told him what I suspected it to be, but he also had never seen or heard of the like.

As the owner of the mare had never employed me previously, I told him that I did not care about operating by myself, and referred him to several veterinary surgeons, any of whom I would be glad to meet.

He chose Mr. Elphick, who wired me to say he would meet me on the 30th. We visited the mare together on that morning, and after a long and careful examination of the tumour, which was then projecting outside the vulva, Mr. Elphick came to the same conclusion as myself. We then thought it expedient to try returning the organ. The means used was a round-headed walking-stick, protected by a soft rag well oiled. The fundus of the bladder was first carefully reverted by the hand, until a pocket was made, into which the head of stick was introduced, and gentle but firm pressure applied upwards and inwards, Mr. Elphick keeping a firm grasp of the neck of bladder with the left hand, guiding the direction of the stick through the meatus urinarius. In about five or six minutes the whole was returned, and very satisfactorily. This all took place in the field where the mare and foal were grazing. We then had her walked into a loose-box, the stick still inserted and held by the hand for fear of a return of the animal straining. The mare was tied up by the head, and an attendant stationed holding the inserted stick until further orders. Being much interested in the case, I made two other visits the same day, at each visit injecting a little "Opii Tr." and Plumbi Acet. in warm water. Urine was passed frequently, and a good deal of straining occasionally, but the pulse was fairly good, and appetite good.

July 1st.—Mare had done well during the night. Longer intervals between urinating, and straining much less. Threw up another injection into bladder and still continued the plug in bladder. Second visit.—Withdrew stick, and stayed in attendance for an hour, with hand over neck of bladder frequently, to test if any likelihood of a return. As there was none during the hour, I decided to leave her free.

2nd.—No tendency of returning, and the body of bladder, which had been enlarged and thickened from inflammation, now felt softer and much less, micturating more naturally, and little straining. In fact, doing very well.

4th.—Mare looked well and hearty; turned both it and the foal out to grass during the day, but to be brought in at night and in case of rain.

I visited my patient several times after this, but there was no necessity to do anything, as she gradually regained the perfect use of the bladder, and is at this date working daily.

In commenting on this very peculiar case, and after inquiries of owner, I learned that it was a first foal, and that it was a very difficult case of parturition; under this difficulty the fundus of the bladder had become inverted, at first slightly, and had ultimately been forced into the meatus, and when first I saw it the fundus was only partially through the meatus, forming the hard tumour-like structure described; but which in the course of a few days, in consequence of the continued straining, gradually became completely inverted.

A hearty vote of thanks to the President for his interesting communication and for occupying the chair brought the meeting to a close.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT the annual meeting, held on October 4th, Professor Pritchard was unanimously elected President, and Dr. G. Fleming, Professor Axe, Messrs. J. Woodger, and C. Sheather were chosen as Vice-Presidents for the ensuing session.

Preceding the annual dinner, on the same day, an ordinary meeting was held, and was well attended by the Fellows, as well as by several members of the Southern Counties Veterinary Medical Association. Mr. J. Woodger presided.

The following essay was read by Mr. HUNTING :—

SOME DISEASES OF THE TESTES AND THEIR APPENDAGES.

Mr. President and Gentlemen,—I have an opinion that there are two kinds of papers which may with equal advantage be brought before our Societies—one, in which the author is able to teach us something new, or to correct old errors ; the other, in which he does neither, but attempts to extract from each individual all the knowledge of the subject he possesses, whether acquired by observation, research, or reading, and thus make each member enlighten the whole. In other words, I hold that the discussion on a paper is likely to be more valuable than the paper. Some of you may object that this is something akin to inviting a man to dinner, and requiring him to bring his own provisions. Well, it is, rather ; but you must remember that to these mental feasts a large contribution is always made by the hearers of the paper ; and let me ask, is that part of the entertainment not generally the most suggestive and most practical? The subject I have chosen for your consideration is one about which I know little, and I find our literature is not very rich in information on the point. It is one which must come more under the notice of the country practitioners than of those in the towns, and for this reason I have chosen it, hoping to meet here a large number of those most experienced in these cases. The diseases of the testes and their appendages, with the operations performed on those parts, is far too wide a subject for a single paper. I have selected three conditions more or less connected with each other—specific Disease of the Testes, Scirrhous Cord, and Scrotal Fistula.

Specific Disease of Testes.—As far as I know, there are only three definite examples of this met with in the lower animals—Simple Inflammation, Cartilaginous Degeneration, and Tubercular Disease. *Simple Inflammation* I have never seen. There is in one volume of the *Veterinary Review* an extract from a French journal narrating a case of Chronic Orchitis, in which the gland was successfully removed. The only interest of the case resided in two points—the weight and size of the testicle, and the fact that it was not adherent to the scrotal sac. *Cartilaginous Degeneration* I have met with once in a black horse. Only one testicle was affected, and this was slightly increased in size, and adherent to the scrotum at its lower part. The disease had not affected the cord, and castration was followed by no bad consequences.

Tubercular Disease I have not seen, but I mention it here, as it was referred to in an article on Scirrhous Cord, etc., contributed to the VETERINARY JOURNAL for December, 1878, by Mr. McGillivray, of Banff. That gentleman (concerning whose writings we have but one complaint to make, that we do not get enough of them) says that Scirrhous Cord is more common in oxen than in horses, and that tubercular affections of the testes are not uncommon in the bovine race.

A question of practical interest is, I think, have these diseases any connection with Scirrhous Cord? I am inclined to think not. My own

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small experience does not include any disease spreading upwards to the cord from the testicle, nor have I been able to trace Scirrhus of the Cord in an animal known to have suffered from previous disease of the gland. Has adhesion of the testicle to the scrotum any effect in predisposing to Scirrhus? I have traced none, but my experience of the condition is too slight to generalize upon. I should almost expect, when adhesions have been broken down, that fresh adhesion would be liable to take place and that Scirrhous Cord would often follow this condition. I do not think it is so. Why is it that Scirrhus is more common in oxen? Is it due to the different methods of castration? or is it determined by a tubercular diathesis?

Scirrhous Cord.—The subject was a grey hunter which had been castrated in Ireland about two or three months previously. His owner had only had him about one month, during which time he had hunted him about once a week. On each occasion the horse started stiff behind, but soon went fairly well. The day after hunting he was lame and stiff, requiring some days' rest before being even fit for exercise. When I saw him he had had some days' rest, was stiff when moved, especially upon the near hind leg, and was in poor condition. The scrotum and sheath were swollen, and the exudation extended into the surrounding subcutaneous tissue. The enlarged mass forming the extremity of the cord felt like a large testicle drawn close up to the ring. The animal was cast, when it was seen that the two incisions made at the time of castration were not firmly cicatrized: the one on the near side was kept open by the fistula. The incision through the swollen sac to reach the tumour was about two inches deep. It passed through tissues not only swollen, but hardened. The enlarged end of the cord was firmly adherent to the scrotum throughout, and large vessels passed from one to the other, and dissecting out the tumour caused considerable hæmorrhage. The cord above the Scirrhus was found much enlarged, nearly the size of one's wrist, but was not hardened. On this part I fixed an ordinary wooden clam, though with some difficulty, owing to the closeness with which the tumour was drawn up to the abdomen. I would ask, in passing, would not the operation have been facilitated by the spreader used in Miles's operation? Having fixed the clam and divided the cord beneath, I endeavoured to stop the bleeding by the thermo-cautery, but without success; partly, I think, from the extra-vascular condition of the cord, and partly from the instrument not retaining its heat when a free flow of blood came in contact with it. I therefore tightened the clams, and left them on. For three or four days great pain was experienced, and some additional swelling took place. In about a month improvement in the general health was noticable, and exercise was given. Another week or two elapsed, when the stiffness behind was again noticed, and fast work was followed by lameness. About five weeks passed between the time of the operation and my seeing the horse a second time. When led out of the stable he showed stiffness of the hind quarters, straddling gait, dragging of the near hind limb, and a peculiar jerky extension of the tail when first moved. The scrotum was more swollen than at first, and two small fistulous openings were visible. He was considered useless, and shot. A *post-mortem* examination was made. The structure of the scrotum was completely hidden in the swelling, which formed a tumour about eight inches across by ten inches long. This tumour was dense, and when cut into presented a number of small abscesses and one large one. On the left side a large artery was plugged by a firm fibrinous clot; the plugging extended nearly to the inguinal ring, where the vessel was distended to nearly half an inch calibre. The remains of both spermatic cords were traced; the left one was still slightly enlarged, but nothing like what it was when last operated on. No appearance of anything abnormal was noticed on the portion of cord within the abdomen. There are a number of questions

suggested to me by this case, which I do not feel master of. First, is Scirrhus a malignant disease? To this I should say, No! I look upon it as a simple product of inflammation. How is this set up? The answer given by every one is the same, Irritation, and a vast number of kinds of irritation are specified. In the case I have just described section of the tumour disclosed a very evident cause—two blades of grass firmly embedded in its substance. May not similar causes of irritation be often at work, and remain unnoticed? It is said that the common cause is adhesion of the cut cord to the lips of the wound in the scrotum; but does not adhesion always occur? What becomes of the cut end of the cord? I never saw a loose extremity to the cord in a gelding. I have not done much castration; probably a hundred cases would cover my experience; but I never had a case of Scirrhus result. I have used clams, actual cautery, and ligature, chiefly the last. I take no pains to break down adhesions. Why, then, have I had no Scirrhus follow? I think that, even if this adhesion has any effect in causing the disease, some other cause must accompany it. If adhesion be the chief cause, how is it that Scirrhus does not inevitably follow the covered operation? As far as I can learn, it has never been seen as the sequel of any form of castration that does not include an opening of the tunica vaginalis, and this at once lets in air, and possibly other foreign sources of irritation. Stretching of the cord has been mentioned as a cause. It may be one, but if so, we should expect to sometimes find the disease higher up on the cord, and not merely always at its extremity. If stretching were a cause, we should expect the formation to continually recur, for far greater stretching is requisite to get above a Scirrhus and fix a clam than is ever required before the cord has been cut.

What are the proportions of Scirrhus to operations by clams, cautery, ligature, and ecraseur or torsion? Are there any statistics? or is it the case that, from some cause not yet clearly defined, Scirrhus may follow any mode of castration in which the scrotum is opened? Why is it that the left cord is always affected? Is it so? If it is, my theory of an accidental irritant is at once exploded.

Scrotal Fistula.—In my case of Scirrhus I described a Scrotal Fistula and its anatomical appearances; this was one of quite recent date, and we can only surmise what it would have been had the animal not been killed. I can now give you the result of my examination of a very old case. I was asked to examine, with a view to removal, a large tumour on an aged chestnut cob. The tumour had been forming for many months; the animal had not recently been worked, on account of the lameness induced and the unsightly appearance of the growth. I found the cob fat, and, with the exception of the swelling, healthy. The sheath, scrotum, and surrounding tissues were all involved in an immense mass about the size of a cow's udder. It was hard, and very closely adherent to the body. There were three or four fistulous openings, and as many cicatrices resulting from old fistulæ. No operation was attempted: the animal was shot. He had been castrated two years before; Scirrhus of the left spermatic cord re ulted, which necessitated an operation on two occasions, and from that time the swelling had gradually increased in size and density. At the *post-mortem* examination the tumour was found to weigh forty-eight pounds. Section showed a very dense fibrous structure, with several cavities containing pus or caseous matter. The fistulæ did not extend far, and communicated with cavities which had evacuated themselves through the sinuses. Although the tumour did not appear sensitive, it was very vascular, though this vascularity did not depend upon the ramification of numerous capillaries so much as upon the number of larger blood-vessels. The two spermatic cords were found in a perfectly normal condition within the abdomen, and also in their passage through the inguina

ring. Their terminal extremities were completely lost amidst the dense structure of the tumour.

Commencing the discussion on the subject, Mr. MARTIN said that with regard to Fistula of the Scrotum, he was of opinion that it often arose from some diseased condition set up in the part, independent of any injury to the cord; and he thought this view would be endorsed by his friends around him who practised in the country. He had but very rarely, if ever found it necessary to advise the slaughter of an animal for this disease; lameness for a time was frequently caused, and he had seen cases in which there had been a discharge for two years; but in the instances in which the primary disorder was Scirrhus recovery generally followed the extirpation of the end of the cord.

Mr. BARFORD spoke in favour of the actual cautery as the castrating instrument, and said his cases of Scirrhous Cord had been few and far between, not exceeding one or two in thirty years. In a tumour of the scrotum, with multilocular abscess, such as the essayist had described, he should not expect to succeed in affording surgical relief, but would have a different opinion with regard to Scirrhus of the cord unless the disease extended to a great distance upwards.

Mr. HOLLINGHAM alluded to a case in which he found a scirrhous condition of both cords: he could only account for it by the supposition that it was due to the cords having been left too long. There might, he thought, have existed a predisposition to tubercular disease.

Mr. SAMSON did not consider treatment would be successful in cases of Fistula of long duration. He knew a horse so affected; the animal came out of the stable lame, but improved in gait after travelling, and the plan of keeping such patients at work was what his experience would lead him to advise. He said that when in Norfolk, some few years back, he witnessed a curious circumstance. Every calf that was castrated that season had Scirrhous Cord result. He could call to mind eighty or ninety cases in which the operation had been performed with the same unpleasant result. He was at a loss to account for it, as the greatest care had been taken with regard to the cleansing and disinfecting of the instruments used. The animals had to be again operated upon, and in some cases the whole of the scrotum was excised.

Mr. BARFORD suggested that perhaps the cautery had been used at too great a heat, but

Mr. SAMSON said that could hardly be the explanation, for what he was alluding to was not the result of one operator's performance only, but occurred uniformly in the practice of three neighbouring veterinary surgeons, and on several occasions they had changed cases to see if different results would obtain, but no clue was found to the cause of the disorder.

Mr. FLEMING agreed with the conclusions of the essayist with regard to Scirrhous Cord, and he thought that leaving the ends of the cord too long was a probable cause of the mischief, inflammation being set up in the exposed portion. There was, he said, no doubt that some cases presented great difficulty to the operator. He was last year requested to see a valuable horse which was affected in this manner, and had for years suffered from a Scrotal Fistula. It was found that the scirrhous portion extended far up into the inguinal canal, and was over two inches in diameter. After great exertion, the chain of an ecraseur was with difficulty made to surround the cord above the enlarged portion, which was then successfully removed. The division had to be made at a point at which it would have been impossible to use the knife or any other instrument. It was a desperate case, but he had reason to be gratified with the result, as the horse returned to work in a very short time, and continued free from any return of his ailment. He had castrated a great number of animals in all climates, and had never known a Scirrhous Cord to follow his operations.

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Mr. CATON related a successful case of removal of a very large Scirrhous Cord, and in regard to the great tension which can sometimes be put on the cord with impunity, gave details of a castration in which, through the struggling of the animal, and insufficient assistance to restrain him, the cord was drawn down to a length of eight or nine inches from the orifice; nevertheless, the horse was quite well in a fortnight.

Professor AXE said he thought it would be generally conceded that the scirrhous formation was of inflammatory origin, and due to injury inflicted upon the end of the spermatic cord. There was nothing of a specific nature in this case, though he had in one or two instances seen the disease assume a malignant appearance. The causation of Scirrhus might be referred to undue exposure of the end of the cord, also to the bruising of the structures between the metal clams, in which cases an inflammatory process was excited. He had seen it follow all methods of castration, more especially after the use of the clams. He had been called upon to operate in a large number of cases, but had found no great difficulty in any instance, and he considered the structure of the parts accounted for that fact, as we had to deal with an inflammatory growth, involving the vessels supplying the texture of the cord, which growth so surrounds and invests these vessels that they are reduced to a condition in which they are incapable of producing any serious results. The part affected might even be simply removed by the knife without danger: this he had proved in some cases of the operation. The first indication of the diseased condition of the parts was generally the issue of discharge from a small orifice in the scrotum. This would be found to communicate with the scirrhous end of the cord. It was his custom to probe the whole course of the sinus, and to take care to operate at a point beyond the seat of suppuration. He thought it possible for Scirrhous Cord to exist without lameness, and with regard to the question, "Is the swelling the cause or effect of the abscess?" he considered it due to a suppurative process going on in one or more centres.

Mr. WOODGER said his experience of the malady was but slight. He agreed with Mr. Fleming in thinking that in many instances it was due to the length of the cord which was left.

Mr. HUNTING, speaking of the prevalence of Scirrhous Cord in oxen, said he had seen bulls castrated in a very free and easy manner, the testicles being forcibly pulled out, and it was a question for consideration whether this might not induce disease, or whether it had origin in a tubercular diathesis. He thought there was something which was as yet unexplained in the cause of this disorder, and referred to the blades of grass he had found. Might not, he said, a foreign body frequently be the origin of the Scirrhus? No doubt the commencement of Scrotal Fistula was a Scirrhous condition of cord, but the cases he cited showed that the diseased cord might be extracted, and yet leave the fistula uncured—a condition more difficult to relieve than the Scirrhus, unless in special instances of difficulty. He thought in some cases of Fistula a cure was exceedingly difficult to accomplish. The abscesses were found in many parts of the mass, and without intercommunication.

The following members then dined together at the Horse-shoe Hotel:—Messrs. J. W. Axe, A. Broad, J. Broad, Arthur Broad, J. Hall Brown, T. Burrell, H. W. Caton, E. M. Davy, H. J. Hancock, W. Hunting, T. Moore, J. Mosedale, T. S. Price, Wm. Pritchard, W. Roots, J. Rowe, F. G. Samson, C. Sheather, W. South, J. Woodger, and F. W. Wragg. The company included several members of the Southern Counties Veterinary Medical Association; viz., Messrs. J. D. Barford, H. Davis, A. Glover, C. F. Hogben, C. A. Hollingham, F. R. Ingersoll, J. B. Martin, P. A. Rock, and H. J. Simpson.

ALFRED BROAD, *Secretary.*

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THE NORTH OF IRELAND VETERINARY MEDICAL SOCIETY.

THE last meeting of this Society was held at the "Thistle" Hotel, Belfast, on Monday, 3rd September. The members present were Messrs. Chambers, Dunlop (Belfast), Giffen, Doris, Dunlop (Downpatrick), Kernohan, Thompson, and the Secretary. Of visitors there were Prof. Walley, Messrs. Hedley Johnston, Stringer, Sherwood, Finlay, etc.

In the absence of Mr. Simcocks (the President), Mr. Doris (Vice-President) was moved to the chair.

The minutes of the previous meeting having been read and confirmed,

Prof. Walley, who had kindly consented to read a paper on "Notes on Medical and Surgical Therapeutics, with especial reference to the value of Bleeding," was called upon to read it. The learned Professor on introducing the subject of his paper, said that although it touched on various diseases, he would refer only to what he considered was of practical utility, and that he would give especial consideration of venesection as a therapeutic agent.

He would first direct attention to Laminitis.

Laminal Congestion and Laminitis.

Subacute Laminal (*venous*) *Congestion* is a frequent cause of obscure lameness in animals of a lymphatic constitution and with broad, flat feet; indeed, it is not an infrequent cause of lameness even in animals having, apparently, good feet. It is usually indicated by more or less lameness and stiffness of gait—most pronounced in descending an incline—by slight elevation of temperature, and tenderness on percussion with a hammer, otherwise the symptoms are negative.

Acute Laminitis is *always* preceded by a period, more or less prolonged, of acute arterial hyperæmia, and it is this condition, not inflammation, which gives rise to the intense fever and suffering by which the affection is characterised, as proved by the fact that in all cases where an opportunity offers of making an autopsy within a period of three or four (or sometimes more) days, and exposing the laminæ by vertical or transverse section of the foot, there is an absolute absence of any inflammatory lesions. Immediately inflammatory lesions occur there is alteration in the position of the feet and in the gait, with moderation of the febrile symptoms, and, in some cases, fluctuation more or less pronounced on pressure being applied to the frog and sole.

In chronic Laminitis important structural changes, with which you are well acquainted, in the laminæ, the wall and the sole result.

Treatment.—In subacute Laminal Congestion, treatment should be directed to the relief of the engorged vessels simply, by the free abstraction of blood from the solar plexus, the administration of physic, and the application of hot poultices or fomentations, followed in the course of three or four days by cold applications, moderate exercise and, subsequently, by the use of irritants to the skin of the coronets, or, in obstinate cases, *frog-setoning* with *coronal irritation.*

In acute Laminal Congestion more energetic treatment is demanded, and upon the efforts used during the first thirty-six or forty-eight hours will the subsequent course and results of the disease depend, *i.e.*, whether the circulation shall be restored, or inflammatory lesions result.

Systemically.—Give laxatives but avoid drastic cathartics more especially aloes. I cannot comprehend such treatment as the latter, particularly where the practitioner entertains the theory that the affection is due to transmitted irritation from the stomach or intestines in consequence of continuity of structure; and most certainly I have seldom, if ever, seen any good result

from it. Very frequently, on the contrary, much harm, as it adds to the irritation, the suffering and the exhaustion. At the very outset of the affection, systemic bleeding, bold diffusible stimulants, with opiates, forced but moderate exercise and *hot* applications to the feet will prevent the congestion becoming established; but once active hyperæmia exists a different plan of treatment is demanded. Systemic bleeding is not of much value here. General stimulants must be replaced by apyretics and vascular stimulants; of the former, aconite and neutral salines are superior to all others; of the latter, belladonna; the only condition to be observed in their use being their administration in *small doses oft repeated.* I need not add that restriction in dietary is a necessary adjunct to the remedial measures adopted, as is also a short bed and encouragement of recubation.

Locally.—Bleed freely from the radial or saphenal veins, or from the coronal plexus. As a rule, I prefer the former at the outset, the latter in the course of a day or two, if the case does not yield to the other measures adopted. Under all circumstances I avoid wounding the circumflex artery of the toe, as it cannot be exposed without injuring the laminæ, and I have several times seen troublesome suppurative Laminitis result. If bleeding in the foot must be adopted, it is best done at the solar plexus. Coronal arteriotomy is equally advantageous and less dangerous. The shoes should, in every case, be removed, the wall rasped down and, if possible, the sole thinned. Following this, the feet should be enveloped in hot poultices, and bandages carried up the leg to the chest or groin, as the case may be, and kept saturated with hot water continuously for a period varying from thirty-six to sixty hours, or until relief is afforded, the object of the latter treatment being to keep the cutaneous vessels of the limb dilated and to relieve the nervous irritation.

As soon as some signs of subsidence of the acute symptoms are observable, forced exercise, in poultices, should be enjoined, with the occasional application of a stimulant to the coronets and, if necessary, repetition of the local bleeding. In about five or six days plain rocking shoes may be tacked on the feet, and the amount of exercise increased, cold applications being substituted for hot; and following on this line of treatment, coronal irritation and frog-setoning if required. If fluctuation is detected the imprisoned fluid should be liberated under antiseptic precautions.

Obscure Foot Lameness.

Obscure Foot Lameness, as already indicated, is often produced by subacute Laminal Congestion. Equally often is it the result of navicular or pedal ostitis, and very frequently, in my opinion, this inflammation is of a rheumatic character as the lameness is intermittent and not accompanied by any local inflammatory phenomena. Such lameness, if neglected, frequently terminates in pronounced Navicular arthritis.

In its treatment, coronal stimulation alternated with cold applications, may be tried, but as a rule, the abstraction of blood from the solar plexus followed, if necessary, by frog-setoning and by firing—pyro-puncture in preference—round the coronet is the only method of treatment by which a permanent cure is likely to be effected.

Quittor.—In all obstinate cases of this disease, caries of the lateral cartilage or of the os pedis, with or without phlebitis, exists, though in some instances there is simply interstitial inflammation, with great hypertrophy and subsequent softening of the new tissue, followed by indolent abscess and sinuous ulcers, and anfractious tumour.

In the treatment of simple Quittor, the free use of the knife actual of potential cautery or setoning, may be sufficient to effect a cure, but in old

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cases the wiser plan to adopt is to cut down boldly on the lateral cartilage and remove it. In the case of anfractious tumours, I have sometimes established a cure by slicing them with the actual cautery, subsequently removing the sectated parts with the scissors, and applying iodized phenol freely for a few days.

Syndesmitis—as Result of Strain.

Violent Strain or Injury to Ligaments or Tendons leads to the same results :—

1st. Acute inflammation—the extent of the inflammatory action depending upon the amount of fibrous and vascular laceration which has taken place.

2nd. The formation of new interstitial tissue in a greater or lesser degree, according to the extent of inflammation which results in (*a*) *enlargement* of the organ, (*b*) *contraction* and, consequently, shortening with more or less immobility and probably lameness.

Contraction, however, may take place quite independently of the aforementioned forces, particularly in the case of ligaments ; thus, whenever ligaments or tendons are placed in an unduly relaxed position for lengthened periods—as in the case of over-worked cab-horses standing with their knees bent forward from exhaustion of the extensor muscles, leading to gradual contraction of the ligaments at the posterior aspect of the knee ; or, as in the case of the sub-tarsal ligaments, from animals which have been subjected to hard work being allowed to stand for hours together with the toes of their shoes in holes in the stable floor.

The ultimate object to be attained in the treatment of these cases is, *firstly*, to reduce the inflammation ; *secondly*, to prevent permanent contraction, immobility and deformity. The first object is attained in a variety of ways : in my experience no treatment is superior to the purely antiphlogistic, *i.e.*, *local blood-letting*, and, best, from the solar plexus in the case of the limbs when dealing with strain of the sesamoids, sub-carpal or sub-tarsal ligaments the flexor tendons or in curb. The relief given by this operation is very great, the lameness often disappearing in a marvellously short space of time : in addition to bleeding, physic should be administered the diet kept low, perfect rest enforced, with mechanical appliances, such as a high-heeled or patten shoe, if necessary ; and hot fomentations applied to the part, with the frequent use of arnica and chloride of ammonia lotion or soap, and chloral hydrate liniment. The best method of applying hot water is the use of spongiopiline, saturated with hot water and covered over with gutta percha tissue or oiled silk.

After the reduction of the active inflammation, iodine applications, blisters, the actual cautery or setons may be employed, and where a high-heeled shoe has been used it should be replaced by a lever shoe to prevent contraction.

In the case of strain of the sub-carpal or sub-tarsal ligaments I have had the best results when I have put on a shoe with a lever toe and thin heels, at the same time rasping the heel of the hoof as low as possible, and firing and blistering ; and, if necessary (as where two legs are strained, as not infrequently happens, and usually two opposite legs as the off fore and near hind) slinging, or at any rate, putting the patient on a short bed, as tan, sawdust, etc.

I have recommended local bleeding only in recent cases, but within the last month I have seen rapid and great benefit result from its adoption in an old case of strain of the sub-tarsal ligament, the animal, a Belgian timber horse, having been lame for several months in spite of blisters, lotions, physic, fomentations, etc. Setons are in my experience useless, and when contraction is very bad and the animal goes on the toe to a combination of the lever toe with high heels usually enables it to work sound and free from pain.

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Bursal Diseases.

Acute Bursitis and Bursal Dropsy are the most common forms of bursal disease with which we have to deal, the latter frequently, but not necessarily, being a result of the former, and usually tardy in formation; occasionally, however, an animal is left perfectly sound over-night, and on the groom going into the stable the following morning, he discovers a thoro-pin or a bog-spavin, with or without lameness. Putting Rheumatism aside, the lesion is usually due to a strain received in endeavouring to liberate the leg from the halter-shank or rope, or from some sudden twist of the leg in rising, or from the animal having been subjected to very severe traction work the day before, the parts being already weak.

Treatment.—In the acute stage of Bursitis, the same treatment should be adopted as in the case of acute Syndesmitis; in the sequential (dropsical) stage, firing, blistering, pressure, or setoning may be employed; setoning, in my experience, giving by far the most satisfactory results. When these measures fail; tapping, aspiration, or evacuation may be had recourse to. The two former I have never seen do any good, the sac—in spite of carefully-applied pressure or blister—usually filling again in the course of a day or two. The last is the most effectual method of dealing with old distensions.

In the case of superficial bursæ (*bursæ mucosæ*), no hesitation need be felt in freely evacuating the sac by a bold incision at its lowest part, and treating as a common wound. With vaginal bursæ the case is different, inasmuch as considerable general fever and local inflammation may follow the operation. This may be obviated by making a bold incision, and immediately injecting the sac with a tolerably strong solution of iodized phenol in glycerine, repeating the injection the following day, or in two days, with a weaker solution. If the pain and fever are great, anodyne applications and fomentations may be employed. The first year I commenced my professional career I evacuated the synovia from a distended patellar bursa in the manner indicated, with the happiest results, the animal walking home a distance of seven miles. The sac was as large as a child's body, and extended from the stifle to the hock. The animal (a colt) had been under the treatment of an empiric for fifteen months.

Skin Diseases.

Probably there is no class of diseases with which the veterinary surgeon has to deal so little understood as these, or in the treatment of which he is so frequently baffled.

I shall not attempt here to deal with the therapeutics of skin affections in detail, nor with the object of considering their treatment shall I give an extended classification. For all practical purposes we may arrange them under a few heads, viz., pruritic, papular, pustular, eczematous, parasitic, infective, and specific.

Pruritis is usually a symptom only, *i.e.*, it is an accompaniment of, and is caused by, local irritation of some kind. Occasionally, however, its actual cause cannot be demonstrated, and it exists quite independently of any actual organic skin affection. In these circumstances we are apt to refer it to some constitutional derangement, consequently we bleed, physic, give alteratives, put our patient on low diet and apply topical sedatives without any benefit. One or two applications of tincture iodine will effectually remove the irritation, showing that it is of local origin and probably due to some deranged condition of the cutaneous nerves.

Papular eruptions may arise independently of, or be associated with, other diseased conditions. They may be local (glandular or vascular) in their origin, or due to some gastro-intestinal derangement, or probably to

hepatic disease; in some cases they are probably due to a deteriorated condition of the blood itself, as would seem to be indicated by the fact that such symptoms are most largely seen in weakly and debilitated, or in grossly fat animals.

Treatment.—In the great majority of cases in animals in high condition, a dose of purgative medicine followed by alteratives and a change in diet is sufficient to effect a cure; in more obstinate cases no treatment short of a prolonged administration of arsenic, combined with potassic iodide, or alternated with it, or mercury, will be of any avail. If symptomatic of gastro-intestinal irritation, as of worms, or other organic disease, treatment must be directed to the implicated organs.

Pustular affections are also, as a rule, symptomatic of some other disease: rarely being of local origin except, perhaps, in the case of that form of pustular dermatitis with which we have recently become acquainted as affecting mainly the skin of the dorsal region in the horse, and which is undoubtedly due to a localized and fixed contagium.

Treatment.—On the whole, the therapeutics of this form of cutaneous disease are identical with those of moist Eczema, unless, indeed, the affection appears to be due, as it sometimes is, to a depraved blood crasis; in that case appropriate constitutional remedies are demanded rather than local applications. Such conditions are not infrequently seen, sometimes preceded by Eczema, in the dog as a sequel of Distemper or blood-poisoning. Here they are of an extreme character. The ecthema is accompanied by irritation so intense as to cause the animal to gnaw holes in its skin, and, in spite of all treatment, the affection goes on unchecked until death ensues.

Eczema, for the purposes of this paper, may be divided (*a*) into *acute* and *chronic*, (*b*) *dry* and *moist*. Either or all forms may be accompanied by pruritis, especially in the dog, in which animal moist Eczema very often appears spontaneously about the hind quarters, root of the tail, and back; occasionally on the plantar surface of the feet (*Eczema plantigrada*), the ears, the neck, and the face. The sheep, too, is very subject to the affection (Wet Scald) in very wet, cold weather; as is the horse when over-fed, or fed on irritant food, as barley; or when the limbs are exposed to the effects of wet and cold (Mud Scald). In cattle, enzootic attacks are seen in early summer, especially when feeding on alsike clover, and in very hot weather the condition is aggravated by the irritation of flies, cellulitis—and even phlebitis not infrequently being set up with the natural result of these processes, pyæmia. With epizootic Eczema (Foot-and-mouth Disease) we are all too familiar; but it is rather with ordinary than with special forms of the affection we are now dealing. *Chronic Eczema*, with hypertrophy of the skin and the cutaneous glands (Grease), is well known to each of you.

Treatment.—Constitutional treatment is undoubtedly of use in all forms of Eczema; if accompanied by fever, febrifuges are demanded; if due to an altered blood crasis, the object we must have in view must be to restore the vital fluid to a healthy condition by the administration of appropriate remedies, such as mercurials, if the condition is sthenic: iron compounds and arsenic, with quinine, if anæmia and debility exist. *Locally.*—In the moist form, no application is of so much use as a lotion composed of alum, borax, and glycerine, with or without carbolic acid; as assisting in the treatment, removal of the hair or wool where necessary, the absorption of the discharges by absorbent material, such as tow; and the prevention of injury by gnawing or scratching must be thought of. An application of nitrate of silver, or, in very moist eruptions, dry alum and charcoal (powdered) is extremely beneficial. In the dry form, salicylic ointment, an ointment composed of Ungt. Picis Co., vaseline, and oxide of zinc; or weak mercurial preparations, are more beneficial. In *chronic Eczema* of a dry form, a strong solution of

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iodized phenol in glycerine is the most serviceable; in the wet form a paste of alum, acetum plumbi and carbolic acid.

Parasitic affections are more numerous, as they are very frequently more difficult to treat, than idiopathic skin-diseases. The parasite may be vegetable or animal, the former being familiar as *Ringworm*, the latter as *Mange*, *Scab*, *Follicular Mange*, etc., and I suppose every one of you will have your favourite remedy for these different affections; their utility I am not going to question, but shall merely point out one or two rules in the *therapeutics* of these affections, by which I think we should be guided. The first, is to continue treatment until all signs of active disease have passed off; the second, is to watch jealously for a recurrence of the symptoms; the third, not to confine our treatment to too circumscribed an area. I need not say that local treatment alone is demanded in these cases; and of all the topical applications none are superior to tarry compounds combined with alkalies. One other rule in all bad cases of Mange must, however, be followed, viz., dress from the tip of the ears to the coronets, let the applications be of sufficient strength as to remove the epidermis in flakes (blister, if you like), and allow it to remain in contact with the skin for a period of from twenty-four to forty-eight hours before removing it with soda, soap and hot water. In follicular mange of either type, cut clean through the affected follicles with the lancet and apply iodised phenol with glycerine.

In Ringworm the same application is specific, as is also Ungt. Hydrar. Biniodid.

Infective inflammations are familiar to us as Erysipelas, Carbuncle, Sphacelus, etc., and the inoculation lesions of Pleuro-pneumonia. In their *treatment* several important rules must be followed, viz., to protect the parts from the atmosphere; to prevent the introduction of bacteria—in other words, apply pastes of medicated starch or fuller's earth, or paint; to prevent the spread of the inflammation by drawing a circle around the affected parts with pure carbolic acid, strong tincture of iodine, or nitrate of silver; to asepticize and render innocuous the products of inflammation by irrigation with iodine and carbolic preparations, solutions of tannic acid, permanganate of potash or ferri perchloride.

Specific localised inflammations, such as Rodent ulcer or those associated with Osteo-sarcoma and Tubercle, are best dealt with as follows:—Firstly, by thorough removal of all diseased parts with the knife, and scraping the subjacent tissues; secondly, by cauterization of the exposed tissues; thirdly, the removal of all the tissue so destroyed by the use of poultices, followed by the free application of iodised phenol.

Rheumatism: Acute and Subacute.

Without attempting to clear up the long-disputed question as to the pathology of this disease, I would at once direct your attention to the benefit to be derived in its treatment by the use of a combination of anti-rheumatics. Some little time after the introduction of salicylic acid and its compounds by Dr. Maclagan, as a remedy in Rheumatism, I published the result of the treatment of a subacute case of the disease in a horse by salicylate of soda. The case was an encouraging one and I have since lost no opportunity of testing the utility of the drug with the result that I have been uniformly successful, not only in relieving symptoms, but in warding off important complications or sequelæ; and I would strongly advise that in all cases of Rheumatism, no time be wasted in the adoption of so-called antiphlogistic or febrifuge treatment, as such, but at once begin the administration of large doses of salicylate of soda or potash, in conjunction with potassic iodide and sulphate of magnesia, or small doses of aloes, alter-

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nating these with calomel or hydrargyrum ℈ creta, and moderating the doses when constitutional symptoms of the effects of the drugs are manifested. When local applications, as to joints or bursæ, are required nothing gives so much relief as iodized soap liniment, freely applied.

The withdrawal of blood, except from the coronal or solar plexus, in rheumatic Laminitis in the horse or ox, has no effect in the moderation of the urgent symptoms of the disease.

Ophthalmia, whether external or internal, is a disease of great importance to the veterinary surgeon, not from any direct fatality by which it is accompanied, but by reason of the great reduction of value it produces by its results in the case of the horse. Usually attributed to the effects of cold or chill acting upon organs predisposed, hereditarily or otherwise, to inflammation, there can be no doubt that Acute Glaucoma, at least in the dog, is occasionally produced by fright or anxiety, and in such cases, destruction of the delicate structures of the eye is very likely to result.

In corneal opacity, powdered carbonate of ammonia or sulphate of zinc lotion may be used; but whether we are dealing with external or internal inflammation, no course of treatment gives such immediate relief as venesection from the angular vein, with the application of anodyne fomentations and belladonna, or Arnica collyria, and the internal administration of mercurials; combining these, when corneal or lenticular opacity arises, or when large quantities of lymph are thrown out into the anterior chamber, with Potassic iodide, and the free use of belladonna or atropine when adhesion of the iris, either at its pupillary margins or elsewhere, takes place. The prolonged use of atropine will bring about corneal opacity hence it must not be pushed too far. Potassic iodide alternated with mercurials and associated with local irritation, will frequently lead to the removal of opacity in the early stages of Cataract.

The value of medicated inhalations in Acute Nasal Catarrh, Rhinorrhœa, Ozœna, and Bronchorrhœa is, I think, little known, or if known, their employment is often neglected.

The constitutional treatment of any one of these affections is a matter of secondary importance. Certainly much good may result from the use of febrifuges in Acute Catarrh; of astringents, as arsenic, iron, copper and iodine; in Rhinorrhœa and Bronchorrhœa: and camphor monobromide, or potassic bromide in the last disease where the cough is troublesome; but greater good is effected by the use of local and direct remedies.

In *Acute Catarrh* the inhalation of sulphurous acid gas frequently gives good results, but much greater good is, as a rule, effected by the medication of steam with terebene or oleum juniperus, creosote, oil of eucalyptus and camphor, or balsam of capivi. When the slightest tendency to chronicity is evidenced, these inhalations should be replaced by, or at least alternated with, iodine or iodized phenol; the latter being especially indicated where the discharges are accompanied by Ozœna, or where Ozœna exists independent of Catarrh, intra-nasal injections of iodine may be also tried. Of equal value are iodine and carbolic inhalations in Bronchorrhœa, and in each case we have a powerful adjunct in counter-irritation, as the application of biniodide of mercury ointment, to the nasal region in Rhinorrhœa, and of iodine or cantharides blister to the thoracic and tracheal regions in Bronchorrhœa.

If Pharyngitis is an accompaniment of Catarrh, belladonna and chlorate of potash are indicated; if Laryngitis, aconite and nitrate of potash.

(*To be continued.*)

THE ROYAL VETERINARY COLLEGE.

THE winter session of this College commenced on October 1st. There was a good attendance of members of the profession, among whom may be ment'oned

Messrs. Collins (ex-Principal Veterinary Surgeon to the Army) Harpley, Cartwright, Meyrick, C.B., Cox, Harford, Dr. Fleming, President R.C.V.S., Wragg, etc., with a large array of students. Lord Arthur Somerset and Lord Norreys were also present (the latter occupying the chair), together with the staff of the College.

The introductory lecture was delivered by Mr. HENRY POWER, who commenced by congratulating the students upon the cheerfulness and zest with which they resumed their work, and which he trusted would be equally felt towards the close of the session, when examinations, instead of being mere specks on the horizon, with no element of danger in them, loomed near and dark. The way to maintain that feeling was, he assured them, to work steadily and earnestly, and it was on this subject he wished to address them on that occasion. He lightly sketched the course of study through which they had to pass to become veterinary surgeons, remarking that the most important part of it was not the mere acquirement of the names of a number of diseases, with a series of prescriptions attached to them, supposed to prove effective in every case, but rather the acquisition of the mode of investigation pursued by their teachers, for they would find that in practice few cases of a typical character presented themselves, the majority having complications which more or less obscured or altogether concealed the primary disease. He pointed out how important it was that they should waste no time, but take advantage of the means of instruction which surrounded them on every side. He recommended them to begin their work in each subject by thoroughly mastering the contents of some small book, when they would feel that they had made some advance and that they had acquired a general conception of the whole subject. He thought that some of the discouragement that was apt to be felt when the first novelty of their work had passed off was due to the impression that the demand on the memory was too great to be overcome, and that it was useless to attempt to master so many details ; but they would find that the habit of work rendered that easy which was at first difficult, that the memory improved by exercise, and that the numerous facts they had to learn had a certain bearing on each other, and if they took time they gradually cohered in the mind into one harmonious whole. It was this which made the difference between the results of steady and continuous work and the process of cramming ; for in the latter process a large number of facts were driven, or attempted to be driven, into the mind in a short time, and, being ill-digested and having little relation to each other, they were forgotten as soon as they had served the temporary purpose of enabling the candidate to pass his examination. While recommending the younger students to occupy their time with study, he still thought they might, if they found a few spare minutes in the evening, cultivate either music or drawing. The mind, like the body, required rest, and such resources as these made and strengthened friendship, and in the case of drawing might prove of great service in enabling them to fix in their memory important cases that would otherwise be forgotten. Addressing the older students, he insisted that they should not leave the college without being thoroughly familiar with all practical work. Much was lost to science because the surgeon under whose care the case fell was unable to mount a specimen, to make an elementary chemical examination of a fluid, or to employ the various instruments now in use in every school. Good cases, as they were termed, did not always come to the Veterinary College. They sometimes made their appearance in remote country places, and were lost because the practitioner was too ignorant or too lazy to investigate and report upon them. He pointed out the important bearing which the pursuit of animal anatomy and physiology and a knowledge of the diseases of animals had upon human medicine and surgery. A large proportion of the facts in these subjects which were regarded as most firmly

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established, and were incorporated in every medical work, were derived from observations and experiments on animals. Among other instances that might be given were these :—It was undoubtedly from the observations and experiments of Harvey on animals that we must date our knowledge of the circulation. The physics as well as the chemistry of the respiration were chiefly worked out upon animals by Malpighi, Mayo, Hales, and others. It was in a dog that Aselli first saw the lacteals. Animals supplied the materials which enabled Malpighi to give an accurate account of them. It was from experiments on animals that nearly all our knowledge of animal heat has been derived. The principal facts that were well substantiated in regard to the nervous system, again, had been obtained from the researches of a multitude of observers on animals. Indeed, of late years, it might rather be asked what subject was not, rather than what had been elucidated by investigations undertaken upon animals. Yet, while acknowledging that much had been done, he still desired to press upon them the imperfection of our knowledge on many points in connection with even the commonest diseases ; and he instanced splenic fever, the *Milzbrand* of the Germans, the *maladie charbonneuse* of the French. How many points still remained unsolved which only required patient and skilled observation to clear up ! What was its origin ? How is it communicated ? Can an animal be vaccinated with it with safety ? Is one vaccination sufficient, or are two required ? How long does vaccination confer immunity ? Why are some animals, like the Algerian breed, more refractory to inoculation than others ? It is generally admitted that the virus is a peculiar small bacillus, but where does this originate ? Is it, as Buchner thought, indigenous in hay ? Can it be brought to the surface of the earth from infected buried carcases, as Pasteur believes, by means of worms, and be ingested into the body by the agency of worm castings ? Are bacilli always present in the animal when the disease is at its height, or do the bacilli sometimes, as Fokker maintains, break up as soon as formed into micrococci ? Are the stages given by Davaine in accordance with fact—first a pustule containing the virus ; then a stage in which an œdematous condition is established around the pustule, the fluid containing the poisonous bacteria in abundance ; and finally the generalization of the disease through the system ? If these statements be true, what important hints for treatment are afforded by them ! Again, how far are Pasteur's later statements accurate, to the effect that the development of the disease is to an important extent dependent on the temperature to which the animal is exposed, so that an attack can be induced in a fowl, which is an animal not otherwise amenable to the disease, by exposing it to damp and cold before inoculation, while, when the animal is sick and about to die, its life can be preserved by the simple expedient of raising its temperature, which proves fatal to the bacillus ? These and many other questions could be asked in regard to this disease alone. What fields then still remained open to research, and what important results even to mankind might accrue, as in the case of trichinism, from an accurate knowledge of any form of animal disorder ! He further pointed out that it was not even necessary, though it was often advantageous, to have the work of others before them. A notable example might be cited in M. Pasteur, who, when solicited by M. Dumas to undertake the investigation of the silkworm disease, replied that he had never so much as seen a silkworm. "So much the better," said Dumas ; "you will commence your investigations unfettered by preconceived opinions ;" and Pasteur was not slow to recognise the truth of the remark. His researches have saved his country millions of francs. In conclusion he exhorted them to work not with examinations in view only, but with the desire of making themselves useful in their day and generation, and of earning an honest and an honourable independence.

At the conclusion of the address, which was extemporaneously and

eloquently delivered, and frequently elicited warm applause, the Chairman, in some well-chosen remarks, thanked the lecturer, and awarded the prizes as follows :—

Coleman Prizes.—Silver Medal, Mr. Layton J. Blenkinsop ; Bronze Medal, Mr. John Morton ; Certificates of Merit, Messrs. E. H. Hazelton and W. H. Bloye.

Cattle Pathology Prizes.—Silver Medal, Mr. John Morton ; Certificate of Merit, Mr. E. Whitley Baker.

Scholarship.—£25 per annum for two years, Mr. Alfred Cawdle ; very highly commended, Mr. G. H. Gibbings.

Class Prizes. Class C.—Hippopathology, Mr. W. H. Bloye ; Cattle Pathology, Mr. Layton J. Blenkinsop ; Morbid Anatomy, Messrs. J. Morton and H. Axe, *equal ;* Helminthology, Messrs. Layton J. Blenkinsop and W. H. Bloye, *equal*, and Mr. A. Hassall, 2nd Prize. *Class B.*—Anatomy, Mr. Edward Taylor ; Histology, Mr. Edward Taylor ; Physiology, Mr. Edward Taylor. *Class A.*—Chemistry and Toxicology, Mr. W. Littlewood ; Materia Medica, Mr. M. G. Byerley ; Practical Chemistry, Mr. E. R. Smythe.

Botany.—Not yet decided.

List of Certificates awarded :—

For acting as Monitors.—Messrs. E. W. Baker, L. J. Blenkinsop, W. H. Bloye, W. R. Bull, J. Morton, C. E. Nuthall, J. G. Parr, H. E. Pinel, R. W. Raymond, J. T. Twiss.

For acting as Clinical Clerks.—Messrs. E. W. Baker, L. J. Blenkinsop, W. H. Bloye, W. R. Bull, J. V. Daly, E. P. Evans, E. Hartley, E. H. Hazelton, R. Hill, S. J. Marriott, J. Morton, C. E. Nuthall, C. W. Page, J. G. Parr, G. T. Pickering, H. E. Pinel, M. Robinson, W. F. Shaw, T. A. Smith, J. T. Twiss.

For acting as Prosectors.—Messrs. L. J. Blenkinsop, C. E. Nuthall, H. E. Pinel.

Certificates of Distinction.—Messrs. W. H. Bloye and J. G. Parr.

Certificates for acting as Veterinary Assistants at the Smithfield Clubs' Show, 1882.—Messrs. L. J. Blenkinsop and S. J. Marriott.

Certificates for acting as Veterinary Assistants at R.A.S. Show at Reading, 1882.—Messrs. W. H. Bloye and J. Morton.

Army Veterinary Department.

Gazette, October 2nd.

The undermentioned Veterinary Surgeons to be Veterinary Surgeons, First Class :—James Kean Grainger, dated 1st April, 1883 ; James Joseph Philips, 1st April, 1883 ; John Herbert Cox, 1st April, 1883 ; Benjamin A. W. Powell, 1st April, 1883 ; John Burton, 14th June, 1883 ; Frank F. Crawford, 14th June, 1883.

To be Veterinary Surgeons on Probation, dated 3rd October, 1883 :—Thomas Pottinger, gent. ; Richard Wellington Raymond, gent.

Gazette, October 19th.

Veterinary Surgeon, First Class, J. Ferris retires on retired pay with the honorary rank of Inspecting Veterinary Surgeon.

J. T. Twiss, gent., to be Veterinary Surgeon on Probation.

The Secretary of State for War has conferred a good-service pension on Mr. J. Collins, late Principal Veterinary Surgeon of the Army, on his retirement, in recognition of the services rendered by him while employed for seven years on the Staff at Headquarters.

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Obituary.

THE death is reported of H. T. Challinor, Southport, who graduated January, 1877; of Thos. Taylor, Manchester, graduated May, 1859; and of W. J. Holland, Manchester, graduated April, 1878.

Belgium has sustained a loss in the decease of two of its prominent members. Professor Delwart, for many years director of the Brussels Veterinary School, and one of its foundation professors, has died at the advanced age of eighty-two years. Modeste Foelen, Government Veterinary Surgeon, and a member of the Royal Academy of Medicine of Belgium, died on August 30th, aged fifty-three years. He was a zealous and enthusiastic veterinarian, and the author of several books and valuable papers on veterinary medicine and hygiene.

Notes and News.

DOGS IN AUSTRALIA.—In consequence of the opinion given by Dr. Fleming, President of the Royal College of Veterinary Surgeons, to the New South Wales Government with regard to the exclusion of Rabies from Australia, we learn by a telegram from Sydney, dated October 2nd, that a proclamation has been issued by that Government prohibiting the importation of dogs except from the Australian Colonies.

CATTLE PLAGUE IN RUSSIA.—According to the *Moscow Gazette*, this disease is raging with desolating effect in the province of Orenburg; indeed, throughout South Russia it is again alarmingly on the increase. The most extraordinary feature of the various reports in connection with the progress of the disease is that wherever the Cattle Plague is most virulent there also the Diphtheria among the people is equally widespread and alarming. In the city of Odessa also the cattle are being decimated. It is satisfactory, however, to turn to the account of a new scheme, just inaugurated, for stamping out the plague. Formerly it was held obligatory on the owners of cattle dying of the plague to see to the proper burial of the carcases at a given depth; but this regulation, efficient on the face of it, became a dead letter for want of proper police inspection. Now, however, immense ovens have been constructed within certain radii of the infected districts, and to these crematory centres owners are compelled, under heavy penalties, to bring the carcases of plague-stricken animals, as well as the refuse and fodder of the infected stables. As this department of cattle cremation has been specially established, and will be conducted and controlled by special staffs, it is to be hoped that no lack of perseverance will mar its success in arresting a pest which has already nearly ruined the agriculturists of South Russia.

Correspondence, etc.

PROFESSIONAL ETIQUETTE.

SIR,—As within the past year so much has been written and said about the "status of the profession," "professional etiquette," etc., etc., I find it necessary to ask you to allow this letter, and those which are enclosed herewith, to appear in your next issue of the VETERINARY JOURNAL:—

On the 12th September last I was requested to accompany a gentleman to Derby, to examine a hunter he was desirous of purchasing for "show purposes," if perfectly sound; particular stress being laid on the horse being *perfectly* sound, as, being for "show purposes," any defects would prove

detrimental to his success. When approaching Nottingham, *en route*, I asked my client where we were going, and he informed me he had purchased a horse from a Mr. Aulton, veterinary surgeon (member of the College) and horse dealer, at Derby, if I passed him sound ; that he thought him one of the best-looking twelve stone hunters he had ever seen, and was very anxious to purchase him if sound. That was the first intimation I had received as to our destination. On our arrival at Derby we went direct to Mr. Aulton's yard, and were shown to a stable in which was the horse in question. The groom went up to his head, I stood in the stable, and my client remained at the door. As soon as the clothing was stripped off I thought I recognised the animal, so I casually remarked, "I think I have seen that horse before." The groom answered me, "I don't think you have, sir." I said, "How long has the guv'nor had him?" He replied, "About eighteen months." I then asked, "Was he not sold at Mr. Donevan's sale at Leicester last year?" To which he replied, "No, sir." There the conversation ended, and I proceeded with my examination. When I had finished a manual examination, I went up to my client to inform him the result, when he asked me, "Do you think you have seen the horse before?" To which I replied, "If I have not seen him I have one just like him, and with the same defects;" and then I added, "He has a bony enlargement on the inside of the near hock, well back, a small curb on the same leg, and an abnormal condition of the sole of the off fore foot." We then had the animal led out, and trotted on the road, when my client remarked, "Does he not go short on the near hind leg?" and, "He has a curb on that leg which I did not notice when I saw him before." I assured him, although the action of the near hock was a trifle exaggerated, I did not consider him lame, and in my opinion the defects were immaterial, and I should consider him "*practically sound.*" He remarked he was no use to him if only "practically sound :" he wanted him to "show," and he must be "perfectly sound." Mr. Aulton having arrived, I asked that the horse might be saddled, which he ordered to be done ; but as no saddle could be found, we waited while one was being sought for ; and in the meantime Mr. Aulton told my client the horse was a little tickle, and did not like a cold saddle, etc., etc. I then told him the result of my examination, so far as I had gone, and mentioned the remarks made by my client. He offered to warrant each and all of the defects, and appealed to me, as a practical man, whether it was possible to find one horse in fifty "perfectly sound." I refused to pass the horse "perfectly sound," and my client thereupon declined to purchase him, and on our leaving the yard we were saluted with a volley of remarks of a semi-offensive nature, for which I apologized to my client, saying doubtless Mr. Aulton was vexed at not having sold his horse, and he would regret such expressions when he got cooler. On the following Saturday morning I was sent for to read a letter my client had received from Mr. Aulton, a copy of which I herewith append *verbatim et literatim.*

(*Copy.*)

"Derby *Sep.* 14*th* 1883.

"Sir,—I received your letter this morning, will you kindly remitt my son cheque for say £25 for compensation and loss of the sale of his horse, through you not taking him according to purchase. We dont wish to have any unpleasantness over the matter, but I think you know my opinion on subject, that is if you have been told by any of my Derby friends any tales about the horse that you felt at all afraid to take him why did you trouble to come and bring a man with you to help you to get out, as one penny stamp and one sheet of note paper would of done for me and saved much annoyance and trouble, as I am a business man I have called in two veterinary surgeon's since and they both pronounce him *sound* and free from

CURBS. I am writeing for Mr. Lawson of Manchester and Mr. Carless of Worcester to come over and examine him and then I think I can produce about Thirty certificates as to his soundness if you dont think well to settle the matter upon amicable terms of course I make this surgestion with out pridigice to the case hereafafire. I may say that the unwarrantable remarks and unpardonable insinuations made by the veterinary surgeon you brought with you, to my men, was most unjust and uncalled for by him or you. when we have settled with you, I will deal with him, and I will give him *Mr. Donevan's Horse to his hearts content*, I am sorry we should have such a man in own proffession to lend himself to such a cause and come to Derby on such an errand. The Horse he represented my son's horse to be to you was a chest horse by Make Haste, and sold a year since this week at Cheltenham repository for 33 gs. which was a brute and went a bad screw in my hands. A Mr. Hughes of Worcester bought him and he was ultimately bought by Mr. Donevan at Bristol repository and sent to Leicester with his stud one month afterwards that was last *Octob.r* the 6th inst. I was called in to examine all Donevan's horses previous to their being sold by auction : and I saw your *clever* veterinary surgeon in the yard nearly two days and examining this Horse over many times during that stay, and at the Sale he bid 140 gs. for him for *you* or some other good *Client* of his I suppose. I went up to him and stopd. him bidding as I felt sorry to see him so *screwed* and one of the greatest flats in England bought him and in two weeks after he was sold at Mr. H. Humphreys sale for 23 gs., and this was the Horse he considered he was examining in my yard for you on Tuesday. this is very clear to me by the questions he asked my clerk and grooms and the unpardonable insinuations he made to them, therefore I must conclude what this special business to Derby on Tuesday was for. I know in your heart you will agree with me that my boy has been cruelly and unjustly treated in the matter by you and your veterinary surgon. I must say I am of an opinion he would of been more properly and better employed at Grantham *gelding dead* dogs—*young bulls, than examing Horses* and I shall wait your decision until Tuesday the 18th inst.—Yours truly,

" W. AULTON V.S.

"To ——, Esq."

(*True copy.*—BEN. H. RUSSELL.)

On the next Tuesday I received the following letter, addressed to " Mr. Russell, Veterinary Surgeon and Castrator of Dogs, Grantham " :—

" Derby *Sep.* 15*th* 1883.

" Sir,—I have received two excuse letters from Mr. —— why he refuses to take my son's horse in the first he informs me you say he has a *Curb*, in the second a *spavin* and other defects is the term he uses in his letter. I had him examined by two veterinary surgeons on Saturday and Mr. Greaves has examined him today they all pronounce him sound and advise me to take take the case into Court They are all of the same opinion as myself that you came with Mr. —— specially to reject my sons horse and that you were brought to do so and agree with me that it is a most unpardonable and ungentlemanly and unjust act for you to do, to lend yourself to such a piece of *jobbery*, and that while we have such men as yourself in the veterinary proflesion it must for ever lay in the back grounds in comparison to other proffessions and as a proof to my opinion herein stated, you came to my stablemen and clerk and persisted in relateing to Mr. —— in their presence that it was the Chest Horse I stopped you from buying out of Mr. Donevans stud last October I mean the Horse you examined all the day on the Friday and half the day on Saturday you were engaged examining him and bid 140 gs. for him the greatest screw that day liveing and would of bought him had I not prevened you, so that I think your wisest plan in future to be honest and say you dont know, and stop at Grantham

gelding *dead* dogs and young *bulls* and not pretend examine *horses* for *Gentlemen* I am sorry to find I cannot enter an action at Law against you and show you up to your Friends You are a worthless fellow you shall have *Donevan*.—I am sir yours "(*Signed*) W. AULTON, V.S.

"You and Mr. —— would cut a good show in the Court you told me yourself that Mr. —— thought the Horse had a curb and went lame it was not what you thought if Mr. —— thought the Horse was blind of course you thought the same and he was practically sound that is *half sound* and half unsound and you call yourself a v. s. I think you would be more in yr. place prisiding as Captain Russell in that little city behind the backwoods of America were they purchase those titles and handles o their names at 2/6 each. You ungentlemanly game and ignorance shall be laid before our members and others. I heard your character when you were at Leicester by yr. own neighbors they put you down as fool and I can back their opinion. W. A. 29 members have examined the horse and passed him sound, and you a real dummy comes to act dirty dummy rejects him. W. A. Since writing I find Mr. —— boasted to Mr. Webster the owner of the Dun mare that he was his own veterinary surgeon and did not belive in vets."

(*True copy, except the suppression of the name of my client, who does not wish it to appear.*—B. H. RUSSELL.)

Resuming the narrative, I have to state that last Friday morning I received a letter from Mr. Aulton not bearing any relation to this matter, but addressed to "Captain Russell, Pig-cutter and Castrator, Grantham."

With reference to the above two letters, I would call attention to the fact that Mr. Aulton in the one states he has written to Mr. Lawson, of Manchester, and Mr. Carless, of Worcester, to go and examine the horse, and in the other that Mr. Greaves examined him on the Monday, etc., also that in the interval between the 12th and 14th he was examined by two veterinary surgeons, and again on the 14th by presumably two others, and they all passed the horse sound, and agreed with him in condemning me. I have written to the only two Lawsons on the register living at Manchester, also to both the Greaves' on the register, and I enclose their replies. I have not yet received a reply from Mr. Carless, of Worcester.

I had no further conversation with his groom than that already stated: his clerk and *stablemen* I did not, to my knowledge, see. He most certainly did not stop me buying a horse at Leicester last year, nor was I two days examining one. The facts are I was sent to Leicester on the Saturday to examine the chestnut horse he refers to, and rejected him on the very same points that I rejected his horse for, on the 12th September; moreover, *he* was a golden chestnut, with two white stockings and a blaze, and very nervous about the head. My client, considering the horse was practically sound, asked me to bid for him to 135 guineas, which I did, and then stopped as the bidding continued. Some half an hour afterwards a gentleman congratulated me on not buying the horse, as he was such a brute, and referred me to Aulton, of Derby, to whom he had formerly belonged, for his character. Knowing he was present at the sale I looked him out, and asked him if he knew the horse. He informed me had had him in his possession several times, and that he was anything but a desirable purchase, and there the matter ended. So much for the truth of Mr. Aulton's statements in his letters under consideration. I have not troubled to reply to them, but offer the matter to you for publication, with the hope that they may afford as much amusement to your readers as they have to—Yours truly,

BEN. H. RUSSELL, F.R.C.V.S.

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"Grantham, *Sept. 29th*, 1883.

"Dear Sir,—I was as much surprised as you at the false charges made in Mr. Aulton's letters. You did not know what horse you were going to examine for me until you met me at the station, and certainly did not bias my judgment about taking him. I should have been pleased at the time to have taken the horse if you could have passed him sound, because I thought he was very cheap if sound. Neither did any one tell me he was a vicious horse. Mr. Aulton told me in his yard (whilst you were examining the horse) he must be mounted very quietly: this even I did not know until he told me.—Yours truly,

"Capt. Russell."

"Greaves and Faulkner, Veterinary Surgeons,
"Knott Mill, Manchester, *Sept. 24th*, 1883.

"Captain Russell.—Dear Sir,—I beg to say I have not examined any horse for Mr. Wm. Aulton, of Derby, during the last fortnight, or, in fact, at any time.—I remain yours most truly, "(*Signed*) THOMAS GREAVES."

"Flixton, *Sept. 24th*, 1883.

"In answer to yours received this morning only, I beg to say I have not been to Derby at all to examine any horse. "(*Signed*) JNO. GREAVES."

"I have not been written to nor have I examined a horse for Mr. W. Aulton, of Derby, within the last ten days.
Dated *Sept. 23rd*, 1883. "(*Signed*) ALEXANDER LAWSON, M.R.C.V.S."

"I have not examined a chestnut horse at Derby since the 12th inst.
Dated *Sept. 24th*, 1883. "(*Signed*) JOHN LAWSON, *per* W. T."

In continuation of this paper I have received another letter from W. Aulton, of Derby, which I shall be obliged by your adding to those already sent.

"Derby *Oct 7th* 1883

"Sir,—My sons horse was sold yesterday by Auction and made £15 more money than yr. friend —— bought him at and I could of made 200 gs. of him if I had been half as big a hound as you and him but I knew my 200 gs. customer could not of ridden him. he was examined by eight vet surgeons and they all knew what you HAD SAID and DONE and not one of them saw *your* CURB. Mr. Donovan will be at Leicester I hope you will appear on the sceene and have two days examinnation again but dont display you talent and make such a fool of your self again as you did twelve month's ago. I will see you are well *waited upon*. I must conclude by telling you again that I consider you an most unpardonable *fellow*. if you committed you self to suit —— as I think youmust of done, if not you are ignorant of the soundness of horses etc.—Yours
"(*Signed*) W. AULTON, V.S."

The above speaks for itself, and needs no comment from me.—Yours faithfully, BEN. H. RUSSELL, F.R.C.V.S.

SIR,—Knowing the great interest you take in all veterinary matters, I venture to ask a portion of your columns, to place before members of the profession and the public generally a case of a reprehensible kind. One of our poets has said that

"Vice is a monster of such hideous mien
That to be hated needs but to be seen,"

and I trust that the exposure of what is in this district becoming too common will act as a deterrent to unscrupulous practitioners.—I am, Sir, yours faithfully, MALCOLM WALKER, M.R.C.V.S.

Alexandria, N.B.

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Mr. John McDougall, V.S., Helensburgh. Veir Place, Alexandria, *28th August*, 1883.

Sir,—I am informed that of late you have made unsolicited calls at Auchintullich, and have there treated an ailing mare which was under treatment by me. I am further informed that you have censured my mode of treatment in the case, while at the same time you have applied treatment differing but slightly, if differing at all, from that applied by me. It is perhaps possible that you are able to give a satisfactory explanation for having so acted; but unless you give such an explanation I must regard your proceedings as a serious offence against the honour of veterinary practice. I shall be glad to hear from you on the matter.—Yours truly, MALCOLM WALKER, V.S.

Mr. John McDougall, V.S., Helensburgh. Veir Place, Alexandria, *12th September*, 1883.

Sir,—Not having heard from you on the subject of your proceedings at Auchintullich, referred to in my letter to you of 28th ult., I am entitled to infer that my information of these proceedings was correct. It is to me matter for surprise that you, a veterinary practitioner, should act as you have done in this case towards a fellow practitioner. However, that you have treated one of my patients is to me a small matter, but that you have done so without being solicited by the owner, without acknowledging me, and without knowing my diagnosis of the case, and the consequent internal treatment applied at my instance—the external treatment would of course be apparent to you—are matters which I cannot let pass without notice. Because in the first case, treatment of a patient by any one ignorant of the immediately previous internal treatment of that patient can neither be safe for the patient nor commendatory of the practitioner; and because, in the second place, the honour of the veterinary profession—a profession which, I had fondly believed, was growing in honour as it advanced in knowledge—is thereby assailed. If £ s. d. prompted your actions, then the matter becomes too despicable for further notice, and any antipathy you may entertain for myself should not be arranged at the expense of our profession. It is my intention to publish this and the former letter.—Yours truly, MALCOLM WALKER, V.S.

120, Princes Street, Helensburgh, *13th September*, 1883.

Dear Sir,—'Tis with pity I pen these few lines, not for the honour of the veterinary profession, but for the honour of some of its members—they have so little to lose. I was urgently requested to attend the bay mare at Auchintulloch, and I asked if any one had seen her; was told "Walker had seen her" when passing on Saturday, but was not attending her. Your diagnosis and treatment I will not comment on at present, but will be pleased to do so when you insert your letters in the VETERINARY JOURNAL.—I am yours, JOHN MCDOUGALL, M.R.C.V.S.

Mr. John McDougall, V.S., Helensburgh. Veir Place, Alexandria, *17th September*, 1883.

Sir,—In your letter of the 13th inst. you state that you were told "Walker had seen her" (the mare) when passing (not the mare, but Walker) on Saturday, but was not attending her. You must either have believed or discredited what you were told. If you discredited it you have yet to give a reason for your treating the mare without acknowledging me. If you believed that I was not attending the mare, then your forthcoming comment on my diagnosis and treatment of a case unattended by me, besides being pleasing to yourself, will certainly have an interest that will not be limited to the veterinary profession.—Yours truly, MALCOLM WALKER, V.S.

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PAPERS AND DISCUSSIONS AT VETERINARY MEETINGS.

SIR,—Will you allow me through the columns of your valuable Journal to offer the following remarks for the consideration of the profession? To prevent misunderstanding as to their scope, I may at once say, that they refer only to papers and discussions at veterinary meetings, and, except incidentally, not to writings in books and reports, which are, of course, prepared as they are intended to be popular or otherwise.

Readers of papers at our various meetings show a growing tendency to employ long, high-sounding, and uncommon words, which to many of their audience are unintelligible, and thus the interest of their communications is in a great measure destroyed. Some of those who discuss the papers are also prone to fall into this very undesirable fault.

It is quite true that the words I now venture to complain of are to be found in recently-published medical vocabularies, but all practitioners have not the time—even if they had the inclination—to "work up" and commit to memory a lot of uncommon and abstruse terms, and especially do they not care to use them when they know that more familiar, yet sufficiently scientific, words are available.

Let us for a few moments go, in imagination, to a medical or veterinary meeting, where a paper stuffed with uncommon and pedantic words is read. The writer begins, the gentlemen composing the audience listening eagerly, because they have—many of them at great inconvenience, and perhaps expense—come to be interested, and they hope instructed. Soon they perceive that the paper is full of "medical vocabulary" words; one by one the hearers become indifferent and inattentive, and perhaps here and there somnolency prevails. After a short time they who understand the reader and are anxious for his success, see that he has lost hold of his audience, and cannot help wishing that he had translated his paper into intelligible English. What is the result of all this, and of a discussion carried on in the same terms? It is, that the discussion is mostly confined to the younger members—the newest from college—and is perhaps almost entirely such as can be obtained from text-books. What we, however, I beg to submit, most want at our meetings is to elicit *all opinions;* yet it often happens that many veterinary surgeons who are most capable of giving desirable information are "least up" in ultra-scientific terms, and are rendered dumb by having to hear a paper read or a discussion carried on, in what has been called transcendental jargon. The same remarks apply to meetings of the medical profession, as many country doctors, who have not had time and opportunity to commit the last-coined words to memory, can testify.

I hope I shall not give offence when I say—and I speak advisedly—that some experienced practitioners, whose opinions it was most desirable to hear, remained silent for this very reason at the last meeting of the National Veterinary Association, and, when I say experienced, I mean some of our most eminent and successful veterinary surgeons, yet in our assemblies we want the benefit of the opinion of all who can give valuable information, and "set us thinking."

It is universally acknowledged to be the greatest mistake for any speaker "to talk over the heads of his audience," for, as said before, the hearers quickly become indifferent and disgusted. Why—to bring forward mild examples—employ at our veterinary meetings such words as hyperæmia, pyrexia, and paresis, instead of such well-understood and quite-scientific-enough terms as congestion, fever, and paralysis? But some of these words are made worse by their having double meanings; for instance, the word "hæmal," which is gradually becoming a favourite, means "pertaining to the blood or blood-vessels," and is also applied to signify the cavity of the trunk.

Paresis is a synonym of palsy or paralysis; it also means a state of weakness or debility; it means general paralysis of the insane; besides having two other significations. I beg to submit that there is in the above remarks enough to justify a strong plea for intelligible and unmistakable language at our meetings and discussions.

I hope I shall not be considered as deriding or undervaluing a knowledge of scientific terms and phraseology; such an idea is far from my mind. My meaning is, that uncommon and unfamiliar words should only be employed when the speaker is quite sure that *all his professional* audience will understand him, and that if he has any doubt on this point, he should translate every such word each time he uses it. It is to be hoped that from a false fear of being considered unscientific, the profession will not drift into the opposite extreme of a misplaced affectation of learning, which will impose upon nobody. We may employ what words we like in our books, because the reader can, if necessary, call in the aid of a medical vocabulary; but when we have induced people to come to our meetings, let us only use terms which are well understood by the profession generally. To do otherwise is wasteful of valuable time, besides being productive of irritation and disappointment.

A recent clever writer thus quotes: "There can, in truth, be no greater fault than that language, which is useful only so far as it is perspicuous or intelligible, should need an interpreter;" and said Quintilian, eighteen hundred years ago, "By perspicuity (clearness) care is taken not merely that the reader may clearly understand, but that he cannot possibly misunderstand."—Your obedient servant,

JAMES LAMBERT, F.R.C.V.S.

Dublin, *October 10th*, 1883.

"HYSTERIA."

DEAR SIR,—The following case I consider was a well marked one of "Hysteria."

Patient.—Half-bred mare, good condition, seven years of age.

History.—Lately she had done very little work; for days together had stood in stable; was taken out the morning that I saw her, and when about six miles on the road she "had a fit," and soon afterwards another; was taken out of harness, and put into comfortable quarters, and veterinary surgeon sent for.

Symptoms.—Pulse full and slow, urine coffee colour, fæces healthy, signs of œstrum.

Treatment.—Gave Aloes barb ʒvi, in form of bolus and Spiritus æther nitratis ʒj p c̄ aqua, and told the man to lead her home quietly, and give bran mashes. Being a client of my neighbour in the next town, I heard no more of the case, but hope to do when I next see my professional friend

EQUUS.

BLOWING AIR INTO THE VEINS.

SIR,—Would any of your readers kindly inform me, through your columns, whether blowing air into the veins of a horse would produce death without causing any cognisable nerve lesions—*tache sans tache?*—Yours, etc.,

"ANÆMIA CEREBRUM."

XUM

BUFFALOES' MILK.

DEAR SIR,—I am inclined to think that the proposal of the Marquis of Lorne to introduce buffalo blood into our bovine friends in Scotland will be very beneficial, and that it is a good idea. But I suppose the progeny will (at any rate for a few generations) be suitable only as meat for the butcher, as it will take some time to convert them into "milking machines," like our ordinary cows. I know nothing about buffalo milk, so can give no opinion. No doubt there are many of your readers who can inform me.

"A VETERINARY SURGEON."

ANSWERS TO CORRESPONDENTS.

NON-PROFESSIONAL.—We are acquainted with only two forms of Foot-rot—the contagious and non-contagious forms. Sheep are rarely, if ever, affected with Tuberculosis; therefore tuberculous Foot-rot is not likely to be witnessed among them. The contagious form is fully described in Fleming's "Veterinary Sanitary Science and Police."

B.A.—The Royal College of Veterinary Surgeons is required, by Act of Parliament, to publish a Register of Veterinary Surgeons every year.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. H. Cox, A.V.D., York; A. E Queripel, A.V.D., India; R. W. Burke, A.V.D., India; "Non-Professional"; M. Walker, Alexandria, N.B.; L. C. Tipper, Balsall Heath; H. R. Bradshaw, Portrush; J. B. Wolstenholme, Manchester; J. H. Steel, A.V.D., India; B. H. Russell, Grantham; "Anæmia Cerebrum"; J. A. Nunn, A.V.D., Lahore; A. W. Briggs, Halifax; J. S. Barber, Rugby; J. H. Carter, Bradford; J. Lambert, A.V.D., Dublin; T. H. Haines, Worcestershire; C. E. Challinor, Pendlebury; A. E. Macgillivray, Banff.; A. Broad, London; R. A. N. Powys, London; "Equus"; "A Veterinary Surgeon."

BOOKS AND PAMPHLETS: *Dr. C. Harms*, Lehrbuch der Tierärztlichen Geburtshilfe; *G. Schneidemühl*, Lage der Eingeweide bei Unseren Haustieren; *Dr. Dammann*, Jahresbericht der König-Tierärzneischule zu Hannover; *H. Krabbe*, Supplementhaefte til Tidsskrift for Veterinaerer, etc.; *Arloing, Cornevin und Thomas*, Du Charbon Bacterien; *Magne and Baillet*, Traité d'Agriculture pratique et d'Hygiène Vétérinaire generale.

JOURNALS, ETC.: *Schmiede Zeitung; Vaccination Inquirer; Annales de Méd. Vétérinaire; La Presse Vétérinaire; La Clinica Vétérinaria; American Veterinary Review; United States Veterinary Journal; Recueil de Méd. Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Journal de Méd. Vétérinaire; Revue Vétérinaire; L'Echo Vétérinaire; Deutsche Zeitschrift für Thiermedicin; Lancet; Mark Lane Express; Medical Press and Circular; Edinburgh Medical Journal; American Live Stock Journal; Archives Vétérinaire; Live Stock Journal; Huf-Schmiede; Repertoriun der Thierheilkunde.*

NEWSPAPERS: *Southport News; Scotsman; Calcutta Englishman; Madras Mail; Irish Sportsman; Leeds Mercury; Glasgow Herald.*

TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion must be authenticated by the name and address of the writer, not necessarily for publication, but as a guarantee of good faith. We cannot undertake to return rejected communications.

Owing to the pressure on our space this month, a number of papers have to be held over until next month.

XUM